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CONTAMINATION ASSESSMENT REPORT SITE 3221SW NAS PENSACOLA FL
2/1/1993
ABB ENVIRONMENTAL SERVICES, INC

CONTAMINATION ASSESSMENT REPORT

**SITE 3221SW
NAVAL AVIATION DEPOT
NAVAL AIR STATION
PENSACOLA, FLORIDA**

UIC: N00204

Contract No. N62467-89-D-0317

Prepared by:

**ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301**

Authors:

**Roger Durham
Pamela J. Wagner**

Prepared for:

**Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418**

Luis Vazquez, Code 1843, Engineer-in-Charge

February 1993



FOREWORD

Subtitle I of the Hazardous and Solid Waste Amendments (HSWA) of 1984 to the Solid Waste Disposal Act (SWDA) of 1965 established a national regulatory program for managing underground storage tanks (USTs) containing hazardous materials, especially petroleum products. Hazardous wastes stored in USTs were already regulated under the Resource Conservation and Recovery Act (RCRA) of 1976, which was also an amendment to SWDA. Subtitle I requires that the U.S. Environmental Protection Agency (USEPA) promulgate UST regulations. The program was designed to be administered by the individual States, who were allowed to develop more stringent standards, but not less stringent standards. Local governments were permitted to establish regulatory programs and standards that are more stringent, but not less stringent than either State or Federal regulations. The USEPA UST regulations are found in the Code of Federal Regulations, Title 40, Part 280 (40 CFR 280) (*Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks*) and Title 40, Part 281 (*Approval of State Underground Storage Tank Programs*). Title 40, Part 280, was revised and published on September 23, 1988, and became effective December 22, 1988.

The Navy's UST program policy is to comply with all Federal, State, and local regulations pertaining to USTs. This report was prepared to satisfy the requirements of the Florida Department of Environmental Regulation (FDER) Chapter 17-770, Florida Administrative Code (FAC) (*State Underground Petroleum Environmental Response*) regulations on petroleum contamination in Florida's environment as a result of spills or leaking tanks or piping.

Questions regarding this report should be addressed to the Environmental Coordinator, Naval Aviation Depot (NADEP), Naval Air Station, Pensacola, Florida, at 904-452-2320, or to Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), Code 1843, at DSN 563-0613 or 803-743-0613.

EXECUTIVE SUMMARY

During an underground storage tank (UST) removal program conducted by the U.S. Department of the Navy in 1989 and 1990, 18 sites at the Naval Aviation Depot (NADEP), Naval Air Station, Pensacola, Florida, were identified as having soil contamination exceeding State target levels for total recoverable petroleum hydrocarbons (TRPH). ABB Environmental Services, Inc. (ABB-ES), was contracted by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to perform a contamination assessment (CA) for each of the 18 sites.

Site 3221SW is the former location of a 1,000-gallon UST reportedly used to store PD-680, a petroleum distillate. The UST was installed in 1967 and was removed from the site during the tank removal program. A single 1,000-gallon UST reportedly used for waste oil storage was installed at the former UST location.

During tank removal activities, two soil samples were collected from the UST excavation and composited. The composite sample was analyzed for total recoverable petroleum hydrocarbons (TRPH). The reported TRPH concentration of 57 parts per million (ppm) exceeded the State target level for TRPH of 50 ppm; hence, further investigation at the site was required pursuant to Chapter 17-770, Florida Administrative Code (FAC).

Soil borings and monitoring wells were placed at the site to assess the degree and extent of soil and groundwater contamination. Discrete soil samples were collected and analyzed by organic vapor analyzer (OVA) headspace techniques and for total metals contents. Groundwater samples were collected and analyzed for constituents of the waste oil analytical group. Groundwater levels were recorded from each monitoring well to assess the direction of groundwater flow.

Laboratory analyses of groundwater samples collected from monitoring wells installed at the site from January to March 1992 indicated that concentrations of petroleum groundwater contaminants were below State target levels. However, tetrachloroethene (PCE), was detected at concentrations exceeding the State recommended guidance concentration in four wells located downgradient of the former UST location. Although PCE has been found to be associated with petroleum (FDER, May 1989), it is not currently regulated under Chapter 17-770, FAC, guidelines; therefore, investigation at Site 3221SW was held in abeyance, and the Florida Department of Environmental Regulation (FDER) was notified of these findings.

A meeting was held on June 17, 1992, with FDER and the U.S. Environmental Protection Agency (USEPA) to discuss the manner of future investigation at Site 3221SW. Because the reported concentrations of PCE did not greatly exceed State recommended guidance concentrations, FDER and the USEPA agreed that additional site investigation could continue under Chapter 17-770, FAC, guidelines.

Site investigation recommenced in August 1992. Five additional downgradient monitoring wells were installed at the site. Groundwater samples from all monitoring wells were collected on August 29, 1992, and analyzed for constituents of the waste oil analytical group. Four additional soil borings were installed near the UST location. Soil samples were analyzed by OVA headspace techniques.

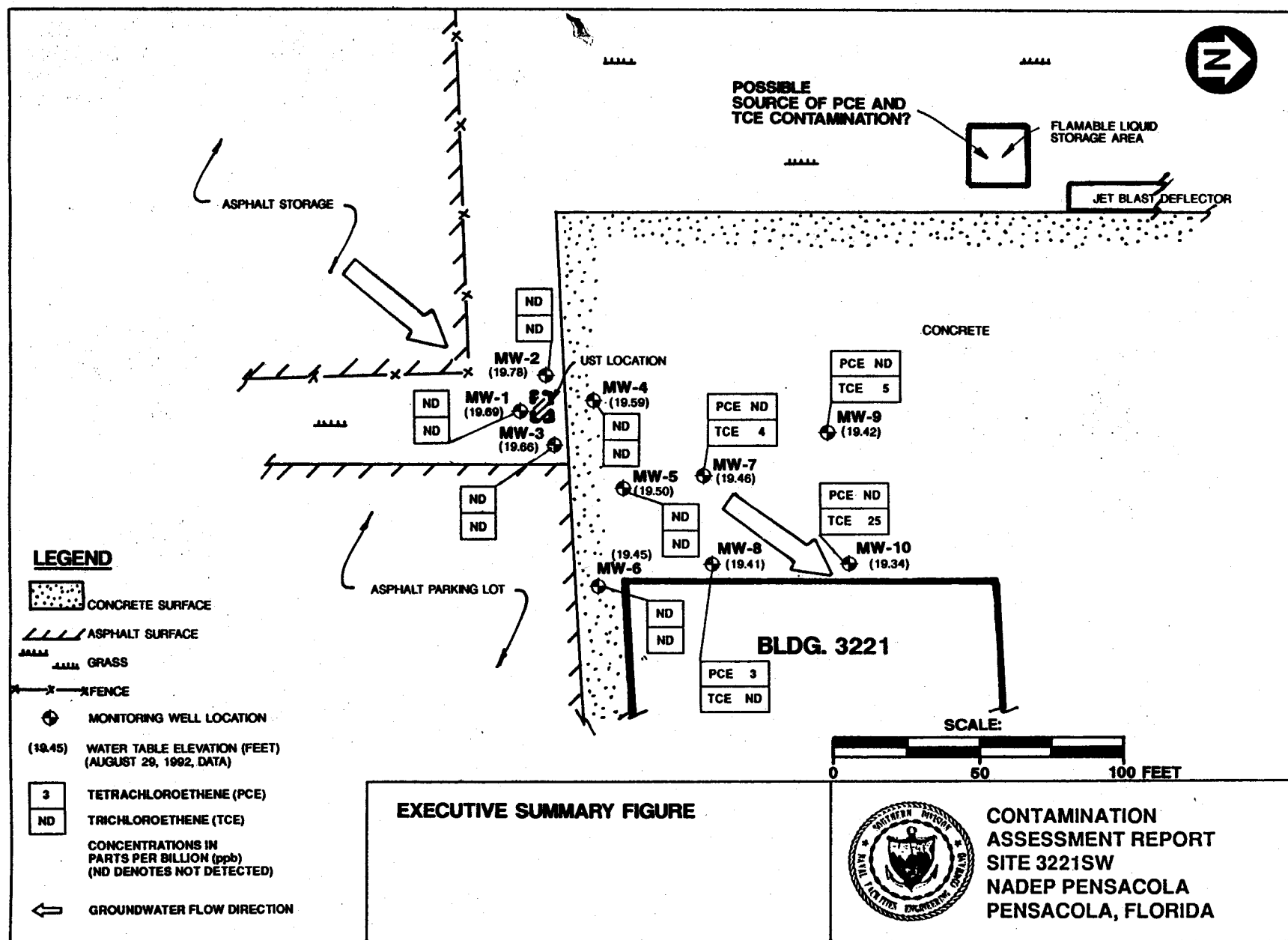
An additional soil sample was collected at the UST location and analyzed for TRPH. The findings, conclusions, and recommendations of the CA are summarized below.

Findings

- Water table elevation measurements indicate that groundwater flow direction is north-northeast.
- OVA headspace analyses and TRPH analysis of discrete soil samples indicate that petroleum contamination in soils near the UST is not significant.
- Concentrations of PCE in groundwater samples from site monitoring wells have decreased since the January to March 1992 sampling event. PCE was not detected in samples collected from monitoring wells located in the area near the former UST location (see Executive Summary Figure). PCE was detected only in the sample collected from well PEN-3221SW-MW8, located approximately 100 feet downgradient of the former UST location. The reported concentration of 4 parts per billion (ppb) slightly exceeds the State recommended guidance concentration of 3 ppb. PCE was not detected in the samples collected from monitoring well PEN-3221SW-MW10, which is located downgradient of PEN-3221SW-MW8.
- Trichloroethene (TCE) was detected at concentrations exceeding State recommended guidance concentrations of 3 ppb in samples collected from wells, PEN-3221SW-MW7, PEN-3221SW-MW9, and PEN-3221SW-MW10. The reported concentrations were 4 ppb, 5 ppb, and 25 ppb, respectively. These wells are located a minimum of 75 feet downgradient of the former UST location (see Executive Summary Figure). TCE was not detected in the samples collected from monitoring wells installed at the former UST locations.
- No other petroleum constituents were detected in groundwater samples collected August 29, 1992.
- The source of TCE and PCE groundwater contamination was not identified during this investigation. A possible source is the flammable liquid storage area located west of Building 3221.
- No potable water wells were identified within a 0.25-mile radius of the site.

Conclusions

- Soil and groundwater petroleum contamination near the UST appears to be minimal.
- TCE and PCE appear to be contaminants of concern at the site. The reported concentrations of TCE and PCE from the August 29, 1992, sampling event are shown in the Executive Summary Figure. The area of concern does not appear to extend upgradient of monitoring wells PEN-3221SW-MW4 and PEN-3221SW-MW5. The lateral and downgradient extent of TCE and PCE groundwater contamination has not been defined.



- Because petroleum contaminants were not found to be associated with PCE and TCE and because TCE and PCE were not found near the former UST locations, it does not appear that the former UST is the source of PCE and TCE contamination. A possible source of the PCE and TCE contamination may be the flammable liquid storage area located approximately 180 feet northwest of the UST area.
- It does not appear that normal site activities will result in the contamination of local potable water supplies at NAS Pensacola.

Recommendations

Because the PCE and TCE contamination found at the site does not appear to be related to leakage from the former or present USTs at Site 3221SW, a *No Further Action Plan (NFAP)* is recommended for the UST located at Site 3221SW. However, further site investigation is needed to assess the areal and vertical extent of TCE and PCE contamination.

ACKNOWLEDGMENTS

In preparing this report, The Underground Storage Tank Section of the Comprehensive Long-Term Environmental Action, Navy (CLEAN) Group at ABB Environmental Services, Inc. (ABB-ES), commends the support, assistance, and cooperation provided by the personnel of the Naval Aviation Depot (NADEP), Pensacola, Florida, and Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM). In particular, ABB-ES acknowledges the effort provided by the following people during the investigation and preparation of this report.

Name	Title	Position	Location
Luis Vazquez	Environmental Engineer	Engineer-in-Charge	SOUTHNAVFACENGCOM
Danny Freeman	Environmental Coordinator	Environmental Coordinator	NADEP Pensacola

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GLOSSARY

The following list contains many of the acronyms, initialisms, abbreviations, and units of measure used in this report.

ABB-ES	ABB Environmental Services, Inc.
BETX	benzene, ethyl benzene, toluene, and xylenes
bls	below land surface
CA	Contamination Assessment
CAP	Contamination Assessment Plan
CAR	Contamination Assessment Report
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action, Navy
CompQAP	Comprehensive Quality Assurance Plan
CTO	Contract Task Order
FAC	Florida Administrative Code
FDER	Florida Department of Environmental Regulation
FID	flame ionization detector
ft/day	feet per day
ft/ft	feet per foot
ft/min	feet per minute
GC	gas chromatograph
HSWA	Hazardous and Solid Waste Amendments of 1984
ID	inside diameter
K	hydraulic conductivity
msl	mean sea level
n	porosity
NADEP	Naval Aviation Depot
NARF	Naval Air Rework Facility
NAS	Naval Air Station
ND	not detected
NFAP	No Further Action Plan
NGVD	National Geodetic Vertical Datum
OVA	organic vapor analyzer
PCE	tetrachloroethene
POA	Plan of Action
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride

GLOSSARY (Continued)

RCRA	Resource Conservation and Recovery Act
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
SPT	standard penetration test
SWDA	Solid Waste Disposal Act of 1965
TCE	trichloroethene
TIC	tentatively identified compound
TRPH	total recoverable petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tank
V	average pore water velocity
VOA	volatile organic aromatics
VOC	volatile organic compounds

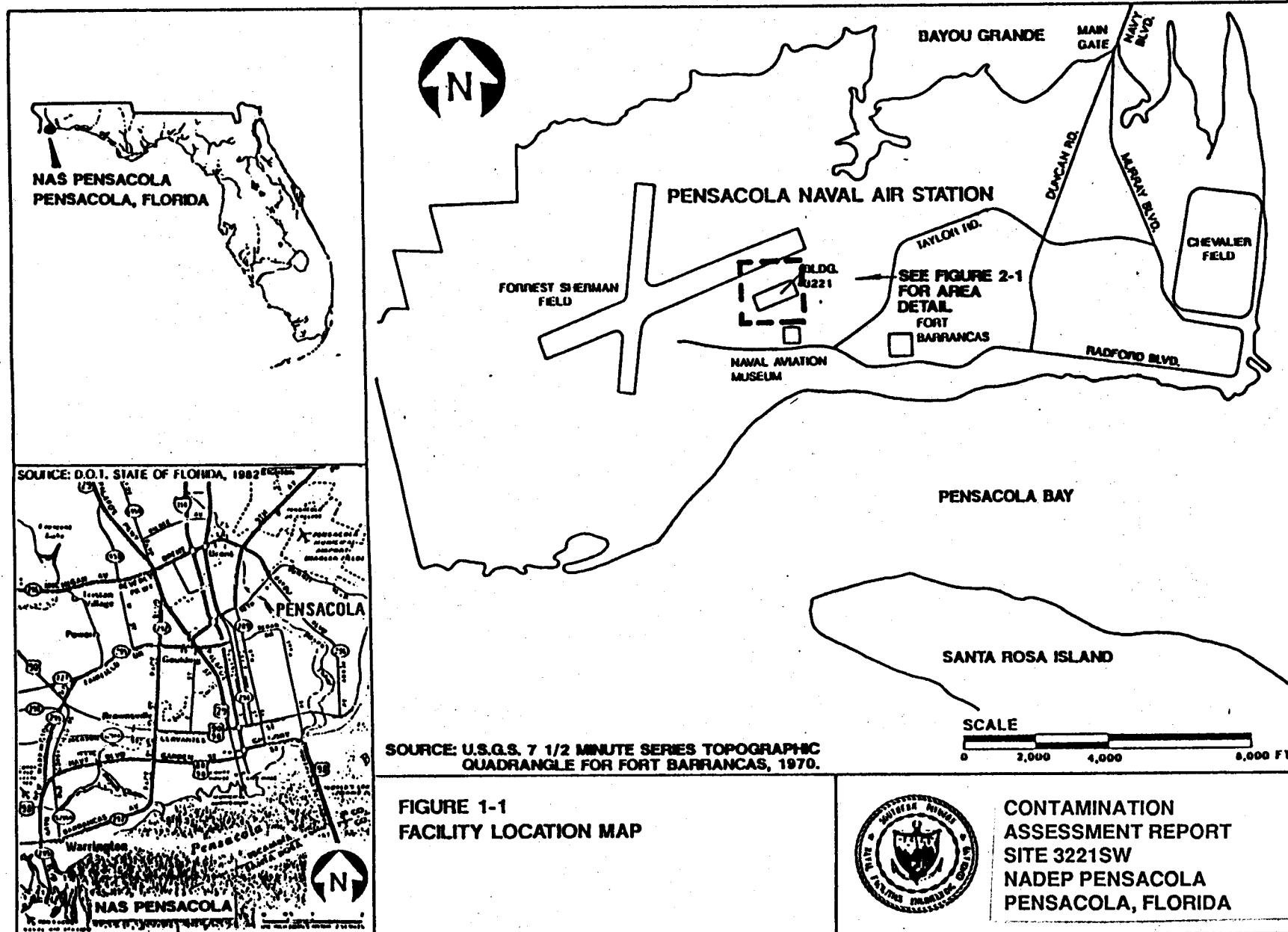
1.0 INTRODUCTION

In 1987, the Naval Air Rework Facility (NARF) in Pensacola, Florida, was renamed the Naval Aviation Depot (NADEP). NADEP Pensacola, Florida, formerly the operations and repair department of the Naval Air Station (NAS) Pensacola, is now a tenant command located on NAS facilities within the Pensacola Naval Base Complex. The Pensacola Naval Base Complex is located on the western edge of Pensacola Bay on State Route 295 (Navy Boulevard; Figure 1-1). NADEP Pensacola occupies approximately 130 acres at NAS Pensacola. The mission of NADEP Pensacola is to: maintain and operate facilities for, and perform a complete range of depot-level rework operations on designated weapons systems, accessories, and equipment; manufacture parts and assemblies, as required; provide engineering services in hardware design; furnish technical services on aircraft maintenance and logistic problems; and perform other levels of aircraft maintenance.

During a tank removal program implemented by the U.S. Department of the Navy in 1989 and 1990, petroleum underground storage tanks (USTs) at various NADEP site locations were removed. In many cases, these tanks were replaced with new USTs. Tank contents were reportedly restricted to petroleum products ranging from waste oil, diesel fuel, and unleaded gasoline to PD-680 (a petroleum distillate solvent similar to mineral spirits). The reported volumes of the tanks varied from 500 to 3,000 gallons. Soil samples were collected from each tank excavation and analyzed for total recoverable petroleum hydrocarbons (TRPH). Based on TRPH concentrations, 18 sites were found to be non-compliant with Florida Department of Environmental Regulation (FDER) target levels, as defined in Chapter 17-770, Florida Administrative Code (FAC).

ABB Environmental Services, Inc. (ABB-ES), was contracted by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to perform a contamination assessment (CA) and submit a Contamination Assessment Report (CAR) for the 18 petroleum contaminated sites at NADEP. This CAR is submitted for one of the sites, Site 3221SW. The scope of services for the work at Site 3221SW is described in Contract Task Order (CTO) No. 008, the Plan of Action (POA), and the Contamination Assessment Plan (CAP) and included the following:

- drilling soil borings and analyzing site soils to assess the extent of soil contamination,
- installing and sampling groundwater monitoring wells to assess the extent of groundwater contamination,
- collecting water level data to assess the groundwater flow direction and hydraulic gradient at the site,
- conducting a potable well inventory within a 0.25-mile radius of the site,
- conducting slug tests on selected wells to estimate aquifer characteristics, and



- reducing and analyzing pertinent data gathered during the CA to complete this CAR.

The CA at Site 3221SW was conducted from January through December 1992. The following sections of this report present the background information, data compilation, results, conclusions, and recommendations of the CAR.

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION. Site 3221SW is a UST located approximately 80 feet from the southwest corner of Building 3221. Building 3221 is located near the eastern edge of the Forrest Sherman Field runway (Figure 2-1) and it is the location of various helicopter maintenance and repair activities for the NADEP. The eastern half of the facility is currently being used by the Museum of Naval Aviation for aircraft restoration. Restoration activities include, but are not limited to, the use of paint and paint products. A large, 18-inch thick concrete apron extends north from Building 3221 to the intersection with the Forrest Sherman Field flightline.

Site 3221SW is the former location of a 1,000-gallon UST reportedly used to store PD-680, a petroleum distillate. The UST was replaced, at the same location, with a 1,000-gallon UST used for the storage of waste oil and PD-680. Figure 2-2 is a site plan showing the location of the existing UST and surface features in the site vicinity.

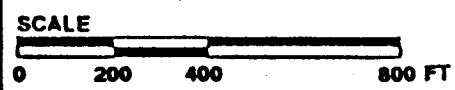
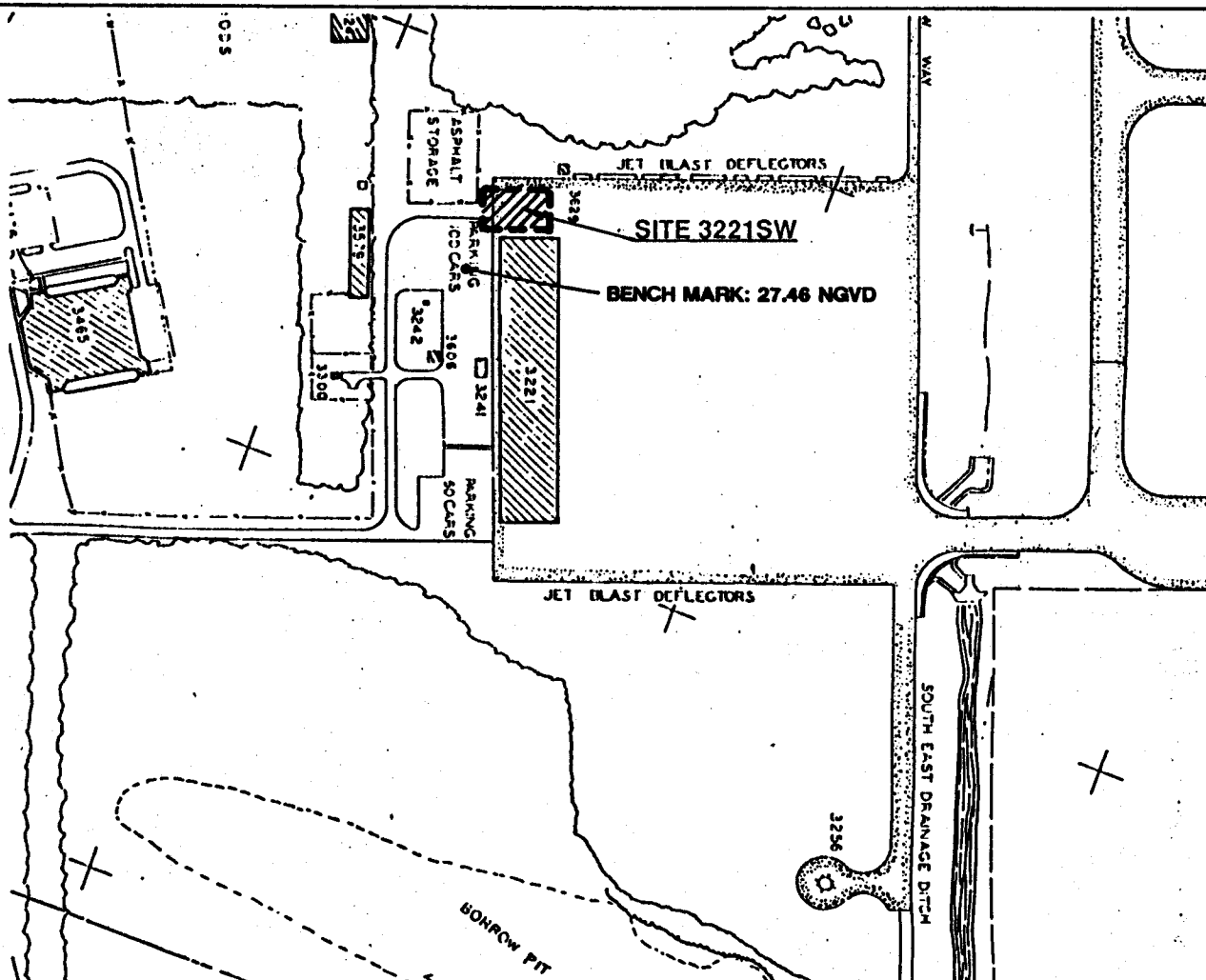
The former UST location is in a grassy area to the southwest of Building 3221. The area north of the UST is covered by 18-inch-thick concrete. This area is primarily used for storage of miscellaneous aircraft and helicopter parts. An asphalt covered parking lot is located to the east of the site (see Figure 2-2 for site details).

2.2 SITE HISTORY. The former UST was installed in 1967 and was removed from the site during the tank removal program. The UST was replaced with the existing 1,000-gallon UST.

Two soil samples were collected from the former UST excavations at a depth of approximately 6 feet below land surface (bls). The samples were composited and analyzed for TRPH. The reported TRPH soil concentration of 57 parts per million (ppm) exceeded the State target level of 50 ppm for petroleum contaminated soils (FDER, May 1992) and, therefore, required further investigation pursuant to Chapter 17-770, FAC. Soil TRPH laboratory analytical results are presented in Appendix E, Laboratory Analytical Data.

The approximate areal extent of the UST excavation and the approximate locations of the TRPH soil samples are shown in Figure 2-3. Excavated soils were returned to the excavation after UST removal.

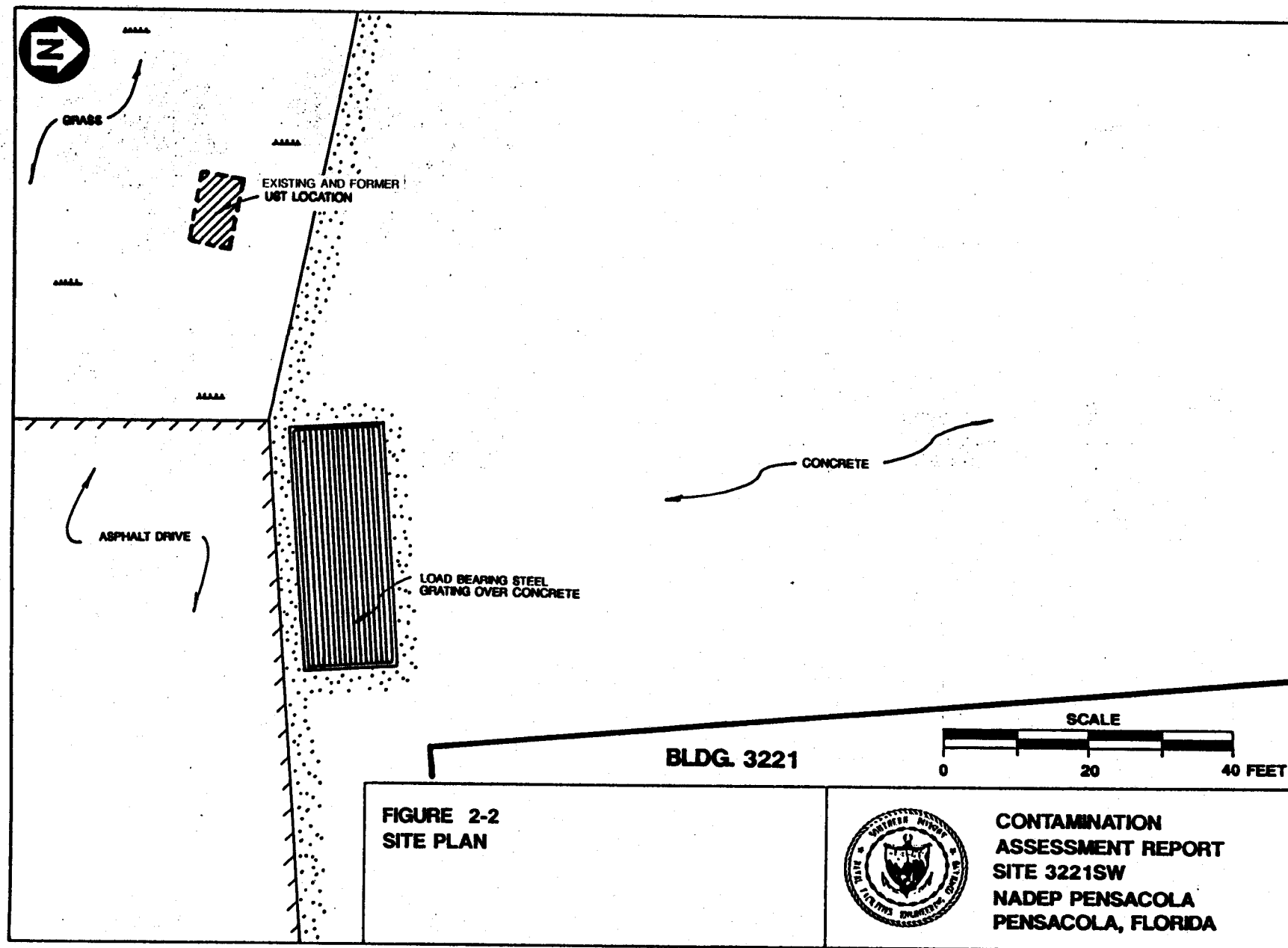
During initial field investigation activities, performed by ABB-ES from January to April 1992, eight soil borings, five permanent monitoring wells, and three temporary monitoring wells were placed at the site to assess the degree and extent of soil and groundwater contamination. Laboratory analyses of groundwater samples collected from these wells indicated that concentrations of petroleum groundwater contaminants were below State target levels. However, three chlorinated compounds, tetrachloroethene (PCE), dibromochloromethane, and trichlorofluoromethane, were identified in the groundwater samples. One of these

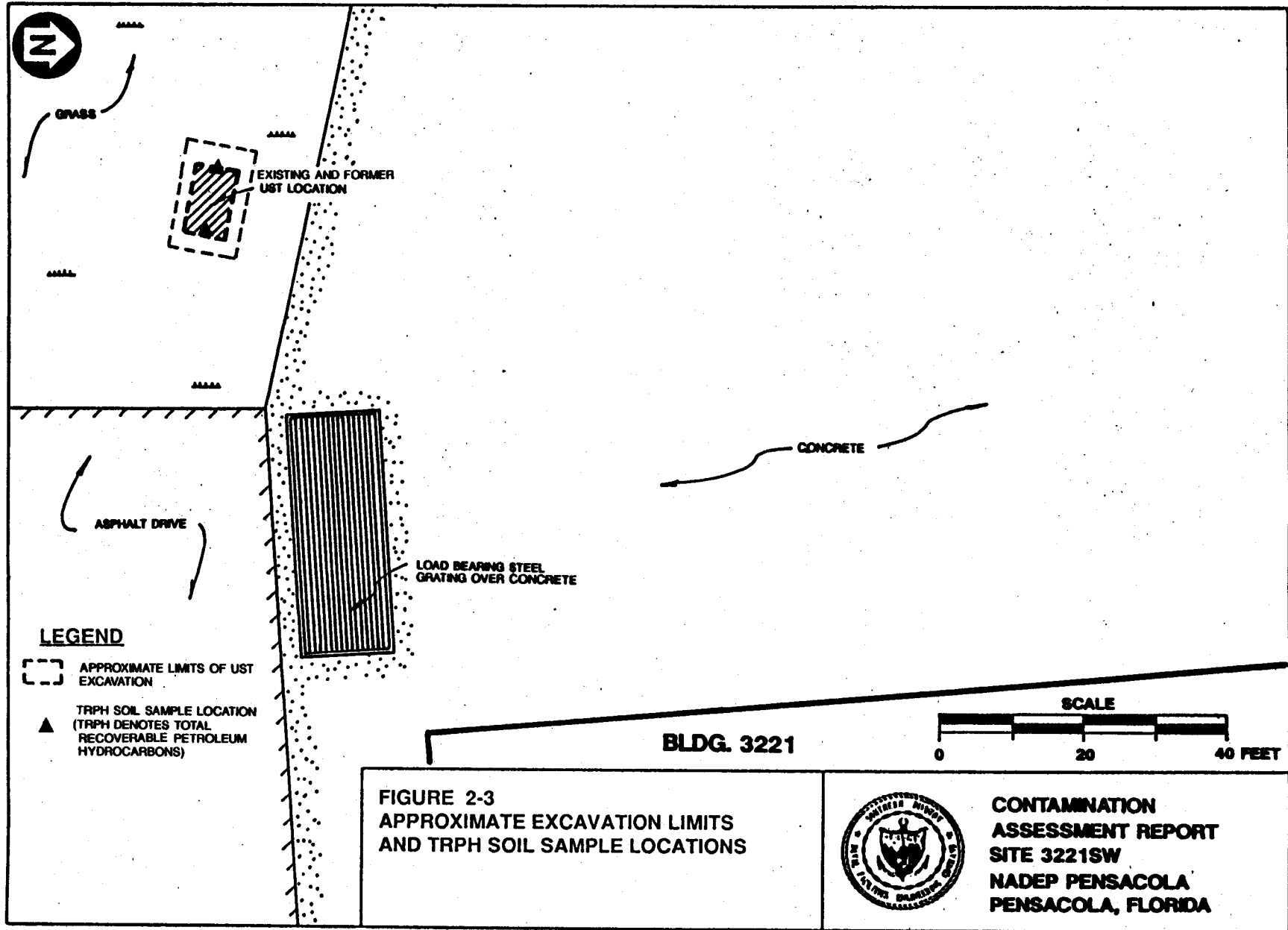


**FIGURE 2-1
SITE LOCATION MAP**



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compounds, PCE, was detected at concentrations exceeding State recommended guidance concentrations in four monitoring wells located downgradient of the former UST location.

Because these compounds are not regulated under Chapter 17-770, FAC, guidelines, investigation at Site 3221SW was held in abeyance, and the FDER was notified of these findings. A meeting was held on June 17, 1992, with FDER and the U.S. Environmental Protection Agency (USEPA) to discuss the manner of future investigations at Site 3221SW. Because the reported concentrations of PCE did not greatly exceed State recommended guidance concentrations, FDER and the USEPA agreed that additional site investigation could continue under Chapter 17-770, FAC, guidelines.

Site investigation recommenced in August 1992 and involved the installation of five additional wells located downgradient of the UST and four additional soil borings near the UST location. The results of this investigation are discussed in Section 5.0 of this report.

3.0 SITE CONDITIONS

3.1 PHYSIOGRAPHY. Regional physiography is discussed in Appendix A, Site Conditions. Surface elevations at the site are relatively flat and are approximately 26 to 28 feet above mean sea level (msl).

3.2 HYDROGEOLOGY.

3.2.1 Regional and Local The Pensacola area is underlain by three water bearing zones. These zones, in order of increasing depth, are the sand-and-gravel aquifer, the Upper Floridan aquifer, and the Lower Floridan aquifer. A detailed discussion of these three aquifers is presented in Appendix A.

3.2.2 Site Specific The principal aquifer of concern at the site is the surficial zone of the sand-and-gravel aquifer. The surficial zone was penetrated to a depth of approximately 20 feet during this investigation. This zone is generally composed of very fine-grained to fine-grained quartz sand. The sand varies in color from white, gray, tan, light brown, and brown to orange-red. A lens of peat was encountered at approximately 17 feet bls in the northwest part of the site. Shell fragments are present in discontinuous layers. The surficial zone is unconfined, and the water table was encountered at depths of 7 to 9 feet bls during this investigation. Site-specific aquifer characteristics and other hydrogeologic parameters are discussed in Section 5.1.

Lithologic logs for soil borings SB1 through SB13 are presented in Appendix B, Lithologic Logs.

4.0 METHODOLOGIES AND EQUIPMENT

4.1 SOIL BORING AND SOIL SAMPLING PROGRAM. Seventeen soil borings, SB1 through SB17, were drilled at the site to assess: the extent and levels of soil petroleum contamination, characterize the type of subsurface material, and aid in the placement of subsequent groundwater monitoring wells. Soil boring locations are shown in Figure 4-1. Discrete soil samples collected from split-spoon standard penetration tests (SPTs) were analyzed for petroleum constituents with an organic vapor analyzer (OVA) equipped with a flame ionization detector (FID). Soil samples were also analyzed for total metals by Wadsworth/ALERT Laboratories, Tampa, Florida. An additional soil sample, collected from SB14 at a depth of 6 feet bls, was analyzed for TRPH. The results of the soil boring program and soil sampling program are discussed in Section 5.2.

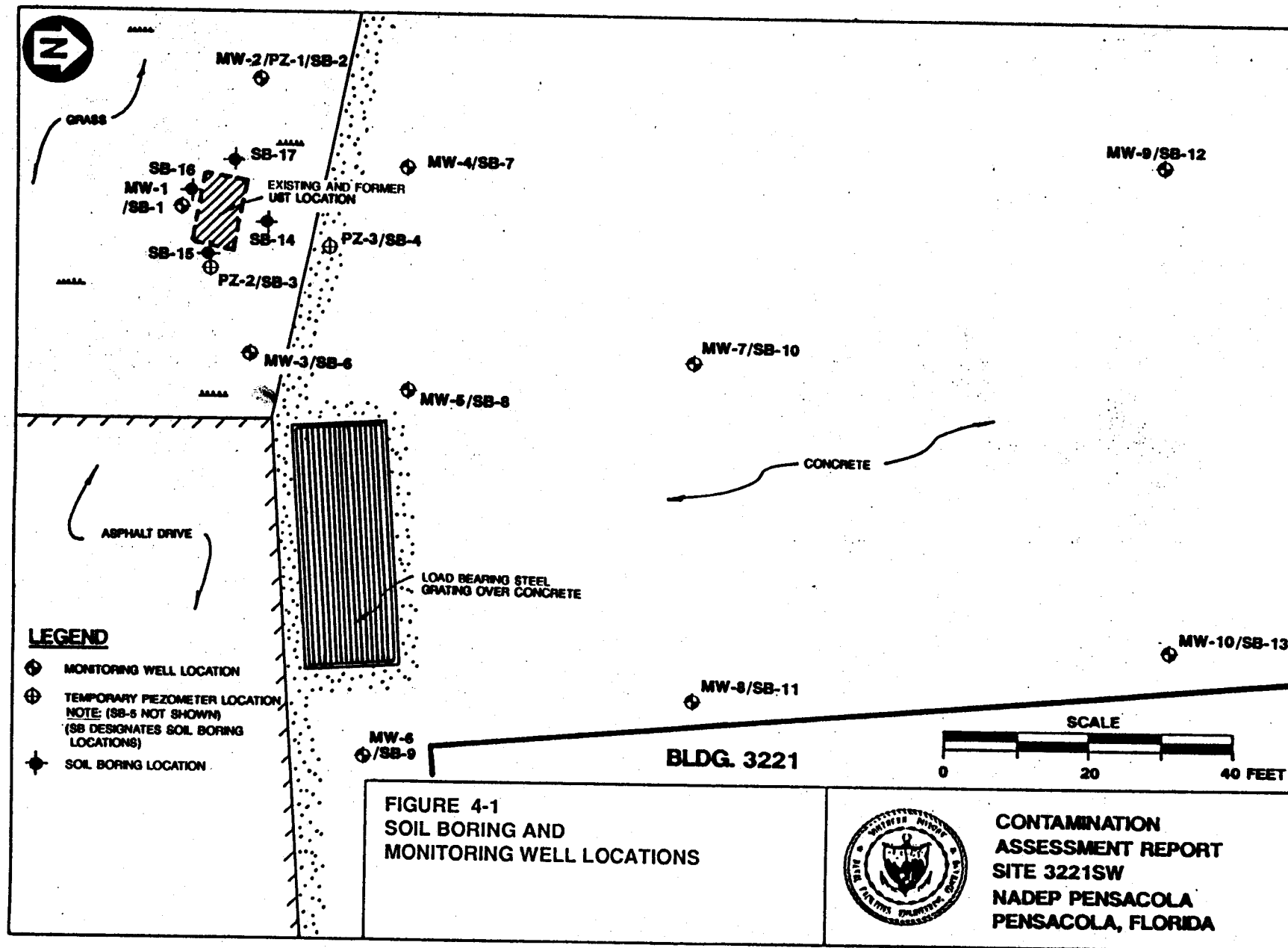
4.2 MONITORING WELL INSTALLATION PROGRAM. Three temporary wells, PEN-3221SW-PZ1 through PEN-3221SW-PZ3, were also installed. Temporary well PEN-3221SW-PZ1 was later upgraded to a permanent well, PEN-3221SW-MW2. The remaining temporary wells have been removed. The monitoring well installation phase of the site 3221SW investigation took place during January 7 through August 27, 1992. A total of 10, 2-inch inside diameter (ID) permanent monitoring wells were installed in selected soil borings. These wells are designated as PEN-3221SW-MW1 through PEN-3221SW-MW10. For simplicity, the prefix "PEN-3221SW" has been omitted on figures and tables in this report. Monitoring well locations are shown in Figure 4-1. Monitoring well construction methodologies and materials are discussed in Appendix C, Investigative Methodologies and Procedures.

4.3 GROUNDWATER ELEVATION SURVEY. The elevation of the water table was measured by surveying the top of the well casing for each monitoring well to a common reference datum using a surveyor's level and stadia rod. Elevations were referenced to a benchmark located on a headwall, approximately 30 feet southeast of the southwest corner of Building 3221 (see Figure 2-1). This benchmark is part of the U.S. Coastal and Geodetic Survey benchmarking system and has an elevation of 27.46 feet above the National Geodetic Vertical Datum (NGVD) of 1929.

Groundwater levels were recorded on April 15, May 20, and August 29, 1992. Procedures for obtaining groundwater level measurements are described in Appendix C, Investigative Methodologies and Procedures.

4.4 GROUNDWATER SAMPLING PROGRAM. Groundwater samples were collected from monitoring wells PEN-3221SW-MW1, and PEN-3221SW-PZ1 through PEN-3221SW-PZ3, on January 25, 1992. Monitoring wells PEN-3221SW-MW2 through PEN-3221SW-MW10 had not been installed at that time. Monitoring wells PEN-3221SW-MW1 through PEN-3221SW-MW5 were sampled on April 15, 1992. Monitoring wells PEN-3221SW-MW6 through PEN-3221SW-MW10 had not been installed at that time. The three temporary wells, PEN-3221SW-PZ1 through PEN-3221SW-PZ3, had been removed or upgraded prior to the April 15 sampling event. All ten permanent monitoring wells were sampled on August 29, 1992.

Groundwater samples were submitted to Wadsworth/ALERT Laboratories for volatile organic compound (VOC) analysis by USEPA Method 624, for base-neutral and acid extractable analysis by USEPA Method 625, for total metals analysis, and for TRPH



analysis. Duplicate samples, laboratory blanks, equipment blanks, and trip blanks were also analyzed with the monitoring well samples. Procedures for collection of groundwater samples are presented in Appendix C, Investigative Methodologies and Procedures.

4.5 AQUIFER SLUG TESTS. Three rising head slug tests were performed in monitoring well PEN-3221SW-MW1 to assess the hydraulic conductivity of the aquifer. Procedures for conducting slug tests are included in Appendix C, Investigative Methodologies and Procedures. Slug test graphical data and calculations are attached in Appendix D, Aquifer Parameter Calculations.

5.0 CONTAMINATION ASSESSMENT RESULTS

5.1 SITE-SPECIFIC AQUIFER CHARACTERISTICS AND HYDROGEOLOGIC PARAMETERS. The surficial zone of the sand-and-gravel aquifer is the primary interval of concern at the site. The surficial zone is unconfined, and the water table was encountered at depths ranging from 7 to 9 feet bls.

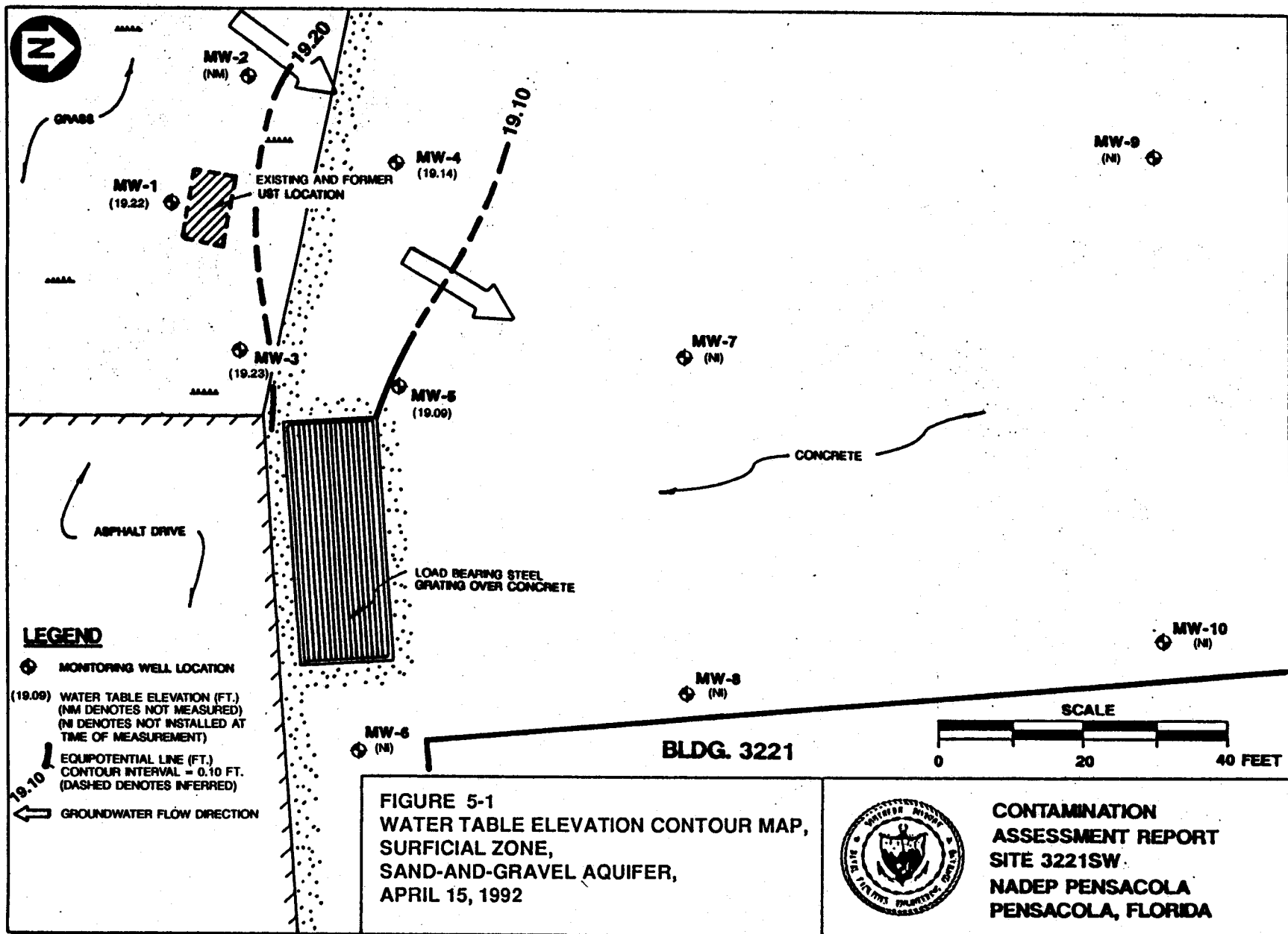
Groundwater levels were recorded in monitoring wells PEN-3221SW-MW1 through PEN-3221SW-MW5 on April 15 and May 20, 1992 (PEN-3221SW-MW6 through PEN-3221SW-MW10 were not yet installed). Groundwater levels were recorded in all ten site monitoring wells on August 29, 1992. These measurements are presented in Table 5-1 and were used to construct water table elevation contour maps to approximate the groundwater flow direction at the site. Water table elevation contour maps for measurements recorded on each date are shown in Figures 5-1 through 5-3. The data indicate a north to northeast groundwater flow direction for each date.

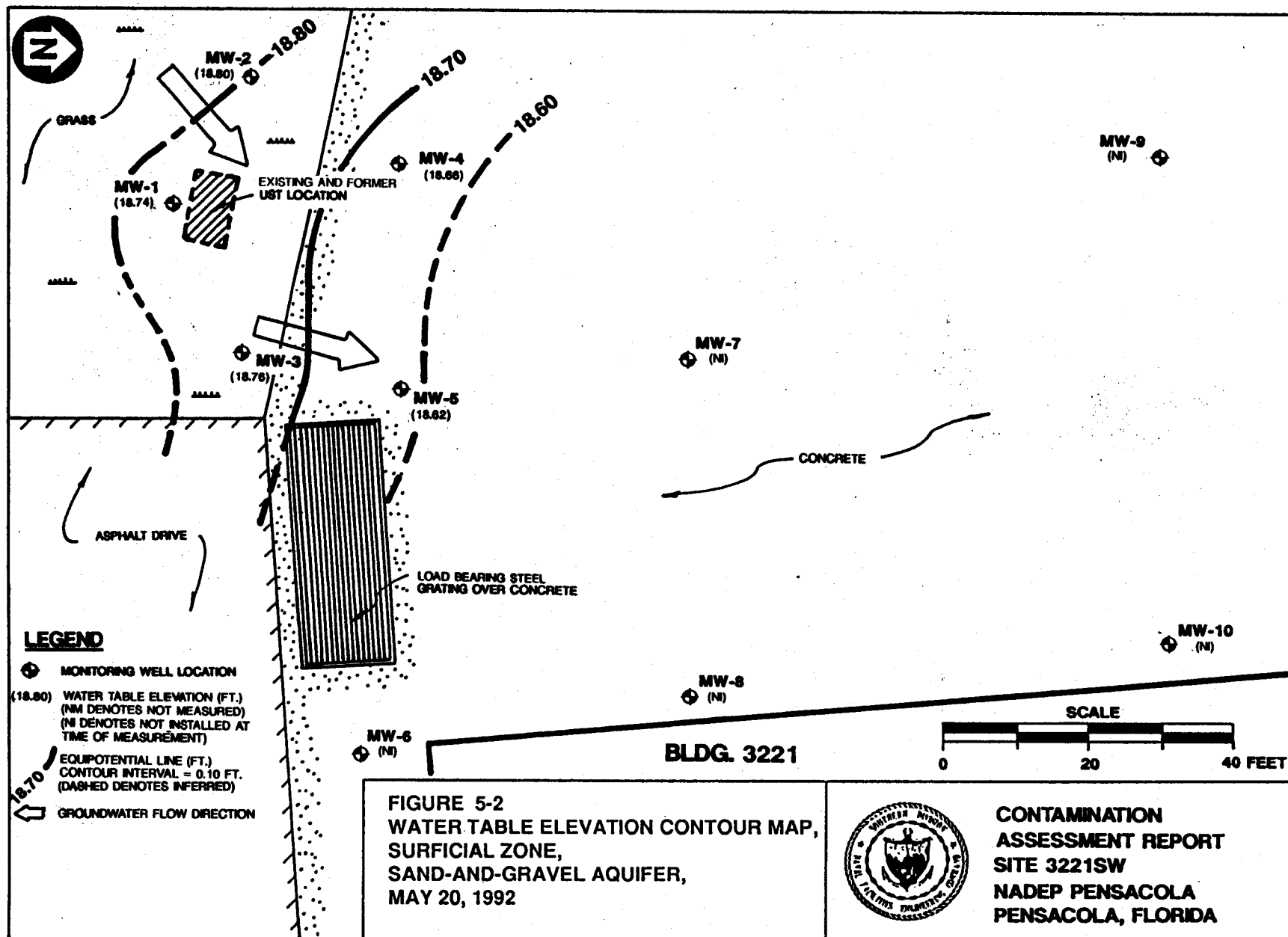
The calculated average hydraulic gradient at the site is 5.6×10^{-3} feet per foot (ft/ft). Slug tests indicate an average horizontal hydraulic conductivity (K) of 5.7×10^1 feet per day (ft/day). The calculated pore water velocity (V) is 1.2 ft/day. Equations and calculations used to estimate these values are presented in Appendix D.

5.2 CONTAMINANT PLUME DEFINITION AND CHARACTERIZATION.

5.2.1 Soil Contamination Assessment The soil contamination assessment phase was conducted January through December 1992. Soil sample locations and analytical results are shown in Figure 5-4. Discrete soil samples from SPT samples were collected from depths of 5 to 7 feet bls in soil borings SB1 through SB13. Soil samples were collected from soil borings SB14 through SB17 at 2-foot intervals to a depth of 6 feet bls. Soil samples were analyzed using OVA headspace techniques. Laboratory total metals analyses for arsenic, cadmium, chromium, and lead were also performed for samples collected from SB1 through SB13. OVA headspace readings and a summary of total metals analyses are presented in Tables 5-2 and 5-3, respectively. In addition, one soil sample was collected from soil boring SB14 at a depth of 6 feet bls. This sample was analyzed for TRPH.

OVA headspace readings indicate that petroleum soil contamination at the site is minimal. Results of laboratory analyses for total metals indicate metals contamination in soil at the site is minimal. Lead was the only metal detected in soil samples collected at the site at a concentration of 13 ppm in the sample from SB-6 at a depth of 6 feet bls. This is far below the State target level of 77 ppm. TRPH concentrations of the sample collected from soil boring SB-14 were 11 ppm, which slightly exceeds the clean soil criterion of 10 ppm. No petroleum odors or discolorations were observed in any soils at the site.





5.2.2 Groundwater Contamination Assessment In some areas of Escambia County, Florida, the surficial zone of the sand-and-gravel aquifer has been demonstrated to be hydraulically connected with the main producing zone of the sand-and-gravel aquifer, making potable water supplies susceptible to contamination in these areas (Roaza and others, 1991). For this reason, the surficial zone at NAS Pensacola will be herein treated as a Class G-II water source, and Class G-II State groundwater target levels will be applied throughout this report.

Groundwater samples were collected from monitoring wells PEN-3221SW-MW1 and PEN-3221SW-PZ1 through PEN-3221SW-PZ3 on January 25, 1992. Monitoring wells PEN-3221SW-MW1 and four additional wells, PEN-3221SW-MW2 through PEN-3221SW-MW5, were sampled on April 15, 1992. In August 1992, five additional monitoring wells were installed for a total of ten monitoring wells. All ten monitoring wells were sampled on August 29, 1992. Groundwater sample laboratory analytical results are presented in Appendix E, Laboratory Analytical Data. Groundwater analytical laboratory results for the January 25, April 15, and August 29, 1992, sampling event are summarized in Tables 5-4, 5-5, and 5-6, respectively.

5.2.2.1 Groundwater Laboratory Analytical Results, January 25, 1992, Sampling Event The distribution of contaminants detected in groundwater samples collected from monitoring wells PEN-3221SW-MW1 and PEN-3221SW-PZ1 through PEN-3221SW-PZ3 on January 25, 1992, is shown in Figure 5-5. The only petroleum constituent identified in the groundwater samples was toluene. Other compounds identified were chloroform, PCE, dibromochloromethane, acetone, trichlorofluoromethane, and methylene chloride (see Table 5-4).

Toluene was detected in samples collected from wells PEN-3221SW-PZ2 and PEN-3221SW-PZ3 at concentrations of 16 parts per billion (ppb) in both. Toluene was also detected in the trip blank associated with this sampling event at a concentration of 3 ppb. Total volatile organic aromatics (VOA) is the sum of benzene, toluene, ethylbenzene, and xylenes. Toluene concentrations in both PEN-3221SW-PZ2 and PEN-3221SW-PZ3 were well below the target levels of 50 ppb for total VOA. Wadsworth/ALERT Laboratories has reported a random appearance of toluene in samples, trip blanks, and equipment blanks at levels ranging from 2 ppb to 22 ppb. During their investigation of the random contamination, it was discovered that the sample container labels in use at that time were contaminated with toluene and 2-butanone. These compounds are volatile and it is possible that the labels might have contaminated the samples. Because the trip blank associated with this sampling event was contaminated with toluene, and toluene was not found in later sampling events, the source of the toluene contamination may have been the sample container labels.

PCE and methylene chloride were the only compounds detected in concentrations exceeding State recommended guidance concentrations (FDER, February, 1991). The State recommended guidance concentration is 3 ppb for PCE and 5 ppb for methylene chloride.

PCE was detected in samples collected from temporary wells PEN-3221SW-PZ2 and PEN-3221SW-PZ3 at concentrations of 15 ppb and 9 ppb, respectively. PCE was not detected in the samples collected from monitoring well PEN-3221SW-MW1 and temporary well PEN-3221SW-PZ1. At the time of sampling, monitoring wells PEN-3221SW-PZ2 and PEN-3221SW-PZ3 were the two most downgradient wells at the site.

Table 5-3
Summary of Soil Sample Total Metals Analyses,
January through December 1992

Contamination Assessment Report
 Site 3221SW, Naval Aviation Depot
 Pensacola, Florida

Sample Identification	Depth (feet)	Concentration			
		Arsenic	Cadmium	Chromium	Lead
SB1/MW1	5 to 7	ND	ND	ND	ND
SB2/MW2	5 to 7	ND	ND	ND	ND
SB3/PZ2	5 to 7	ND	ND	ND	ND
SB4/PZ3	5 to 7	ND	ND	ND	ND
SB5	No sample collected				
SB6/MW3	6	ND	ND	ND	13
SB7/MW4	5	ND	ND	ND	ND
SB8/MW5	5 to 7	ND	ND	ND	ND
SB9/MW6	5	ND	ND	ND	ND
SB10/MW7	5	ND	ND	ND	ND
SB11/MW8	5	ND	ND	ND	ND
SB12/MW9	5	ND	ND	ND	ND
SB13/MW10	5	ND	ND	ND	ND
State target level ¹		55	55	275	77
¹ Florida Department of Environmental Regulation (May 1992). Notes: Concentrations are in parts per million (ppm). Samples collected from SB14 through SB17 were not analyzed for total metals. ND = not detected.					

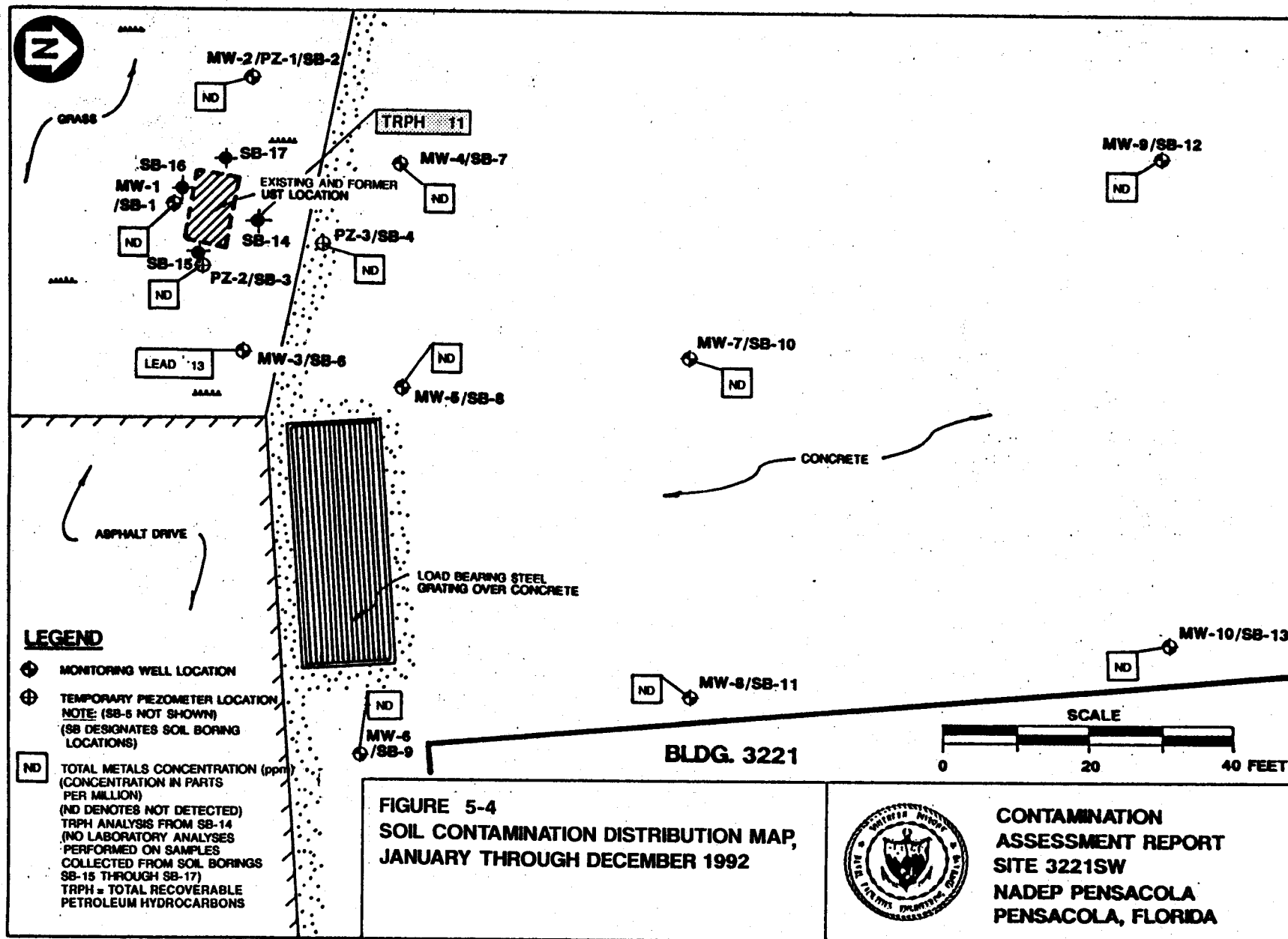
Table 5-2
Summary of Soil Sample Organic Vapor Analyzer (OVA) Headspace Analyses,
January through December 1992

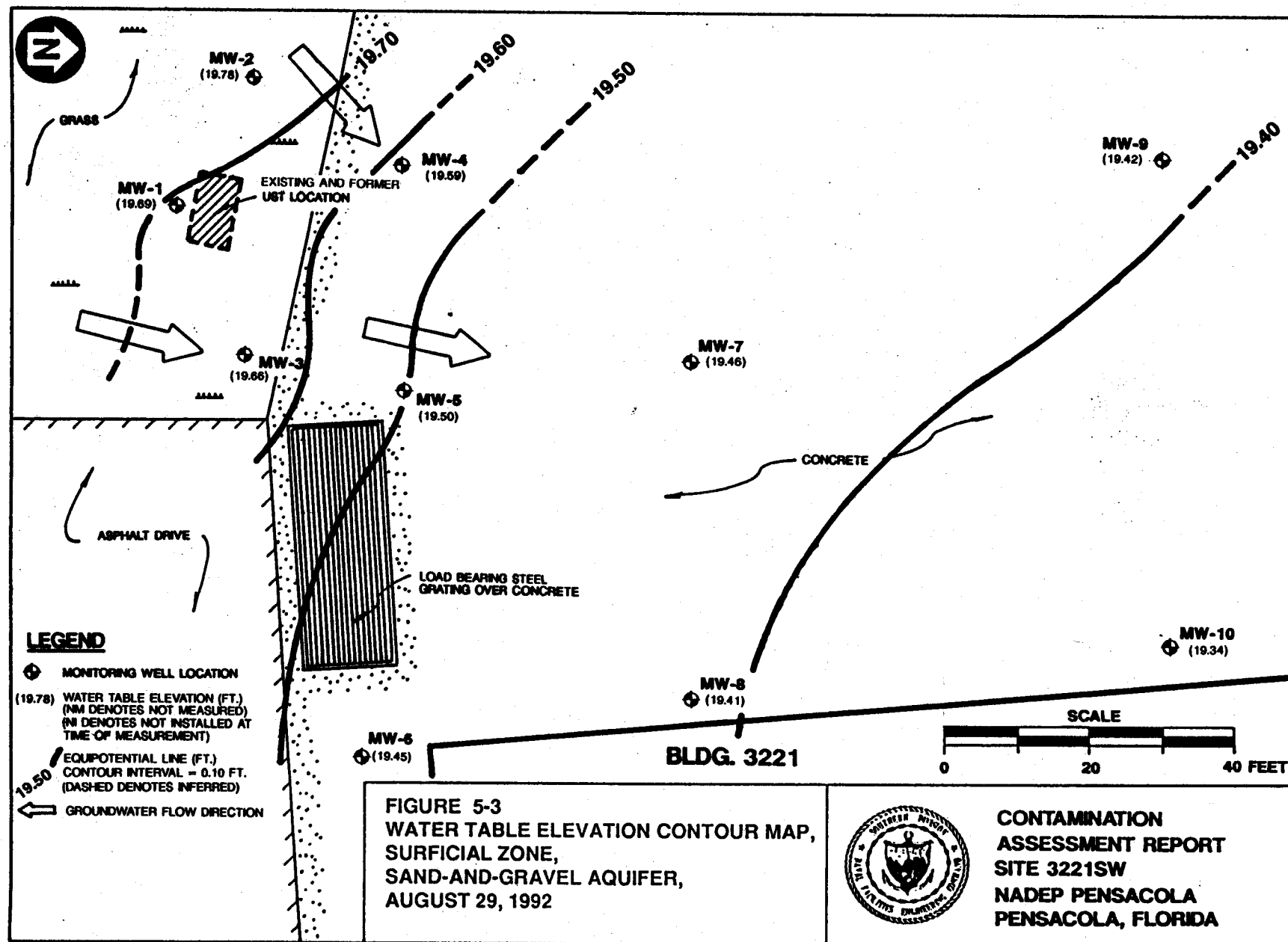
Contamination Assessment Report
Site 3221SW, Naval Aviation Depot
Pensacola, Florida

Boring Designation	Depth (feet)	Concentration ¹ (ppm)	Comments
SB1/MW1	5-7	0	No odor and no discoloration
SB2/PZ1	5-7	0	No odor and no discoloration
SB3/PZ2	5-7	0	No odor and no discoloration
SB4/PZ3	5-7	0	No odor and no discoloration
SB5/PZ4	NM	NM	
SB6/MW3	5	0	No odor and no discoloration
SB7/MW4	5-7	0	No odor and no discoloration
SB8/MW5	5-7	0	No odor and no discoloration
SB9/MW6	5	0	No odor and no discoloration
SB10/MW7	5	0	Slight sulfur odor, no discoloration
SB11/MW8	NM	NM	Slight sulfur odor, no discoloration
SB12/MW9	5	0	No odor and no discoloration
SB13/MW10	5	0	No odor and no discoloration
SB14	2	1	No odor and no discoloration
	4	0	No odor and no discoloration
	6	0	No odor and no discoloration
SB15	2	0	No odor and no discoloration
	4	0	No odor and no discoloration
	6	NM	No odor and no discoloration
SB16	2	3	No odor and no discoloration
	4	0	No odor and no discoloration
	6	0	No odor and no discoloration
SB17	2	NM	No odor and no discoloration
	4	0	No odor and no discoloration
	6	0	No odor and no discoloration

¹Corrected for methane.

Note: ppm = parts per million.
NM = not measured.





**Table 5-4
Summary of Groundwater Sample Laboratory Analyses,
January 25, 1992**

Contamination Assessment Report
Site 3221SW, Naval Aviation Depot
Pensacola, Florida

Compound	State Target Level or Guidance Concentration	MW1	MW1 Duplicate	PZ1	PZ2	PZ3	Equip- ment Blank	Trip Blank	Labora- tory Blank
Toluene ¹		ND	ND	ND	16	16	ND	3	ND
Total VOA	² 50	ND	ND	ND	16	16	ND	3	ND
Methylene chloride	³ 5	12	18	13	15	79	13	14	8
Chloroform	³ 100	ND	ND	ND	3	ND	ND	ND	ND
PCE	³ 3	ND	ND	ND	15	9	ND	ND	ND
Dibromochloromethane		ND	ND	ND	1	ND	ND	ND	ND
Acetone	³ 700	ND	ND	ND	ND	ND	13	ND	NA
Trichlorofluoromethane	³ 2,400	ND	ND	ND	ND	ND	ND	2	ND

¹Detected in trip blank.

²State target level (Florida Department of Environmental Regulation [FDER], Florida Administrative Code [FAC]).

³Guidance concentration recommended by FDER (February 1989).

Notes: Concentrations are in parts per billion (ppb).

Duplicate sample was collected from monitoring well MW-1.

ND = not detected.

Total VOA = total volatile organic aromatics; the sum of benzene, ethylbenzene, toluene, and xylenes.

PCE = tetrachloroethene.

NA = not analyzed.

Table 5-5
Summary of Groundwater Sample Laboratory Analyses,
April 15, 1992

Contamination Assessment Report
 Site 3221SW, Naval Aviation Depot
 Pensacola, Florida

Compound	State Target Level or Recommended Guidance Concentration	MW1	MW1 Duplicate	MW2	MW3	MW4	MW5	Equipment Blank	Trip Blank	Labora- tory Blank
Chloroform	¹ 100	ND	ND	ND	1	ND	ND	ND	ND	ND
Methylene chloride	¹ 5	ND	ND	ND	ND	ND	13	ND	ND	1
PCE	¹ 3	ND	ND	ND	8	1	6	ND	ND	ND
Lead	² 50	ND	6	ND	ND	ND	ND	ND	ND	ND
Tentatively identified compounds (TICs) and their estimated concentrations										
Butylcyclobutane		16	19	ND	ND	11	ND	ND	NA	ND
1-Methylethyl benzene		ND	ND	ND	ND	ND	9	ND	NA	ND
1,2-Diethyl benzene		ND	ND	ND	ND	ND	37	ND	NA	ND
1,3-Diethyl benzene		ND	ND	ND	ND	ND	21	ND	NA	ND
1,4-Diethyl benzene		ND	ND	ND	ND	ND	13	ND	NA	ND
1-Methyl-3-(1-methylethyl benzene)		ND	ND	ND	ND	ND	77	ND	NA	ND
1-Methyl-4-(1-methylethyl benzene)		ND	ND	ND	ND	ND	66	ND	NA	ND
1-Ethyl-2,3-dimethyl benzene		ND	ND	ND	ND	ND	28	ND	NA	ND
1-Ethyl-3,5-dimethyl benzene		ND	ND	ND	ND	ND	18	ND	NA	ND
2-Ethyl-1,4-dimethyl benzene		ND	ND	ND	ND	ND	29	ND	NA	ND
4-Ethyl-1,2-dimethyl benzene		ND	ND	ND	ND	ND	57	ND	NA	ND
1,3,5-Trimethyl benzene		ND	ND	ND	ND	ND	150	ND	NA	ND
1,2,3,4-Tetramethyl benzene		ND	ND	ND	ND	ND	35	ND	NA	ND
1-Octanol		ND	ND	ND	ND	ND	15	ND	NA	ND
2,3-Dihydro-1-methyl-1H-indene		ND	ND	ND	ND	ND	25	ND	NA	ND
2,3-Dihydro-4-methyl-1H-indene		ND	ND	ND	ND	ND	13	ND	NA	ND
1,2,3,4-Tetrahydro-naphthalene		ND	ND	ND	ND	ND	8	ND	NA	ND
1-(4-Methylphenyl) ethanone		ND	ND	ND	ND	ND	19	ND	NA	ND
Total TICs		16	19	0	0	11	620	0	0	0

¹Guidance concentration recommended by Florida Department of Environmental Regulation (FDER) (February 1989).

²State target level FDER, Chapter 17-770, Florida Administrative Code [FAC]).

Notes: Concentrations are in parts per billion (ppb).
 ND = not detected.

PCE = tetrachloroethene.
 NA = not analyzed.

Table 5-6
Summary of Groundwater Sample Laboratory Analyses,
August 29, 1992

Contamination Assessment Report
 Site 3221SW, Naval Aviation Depot
 Pensacola, Florida

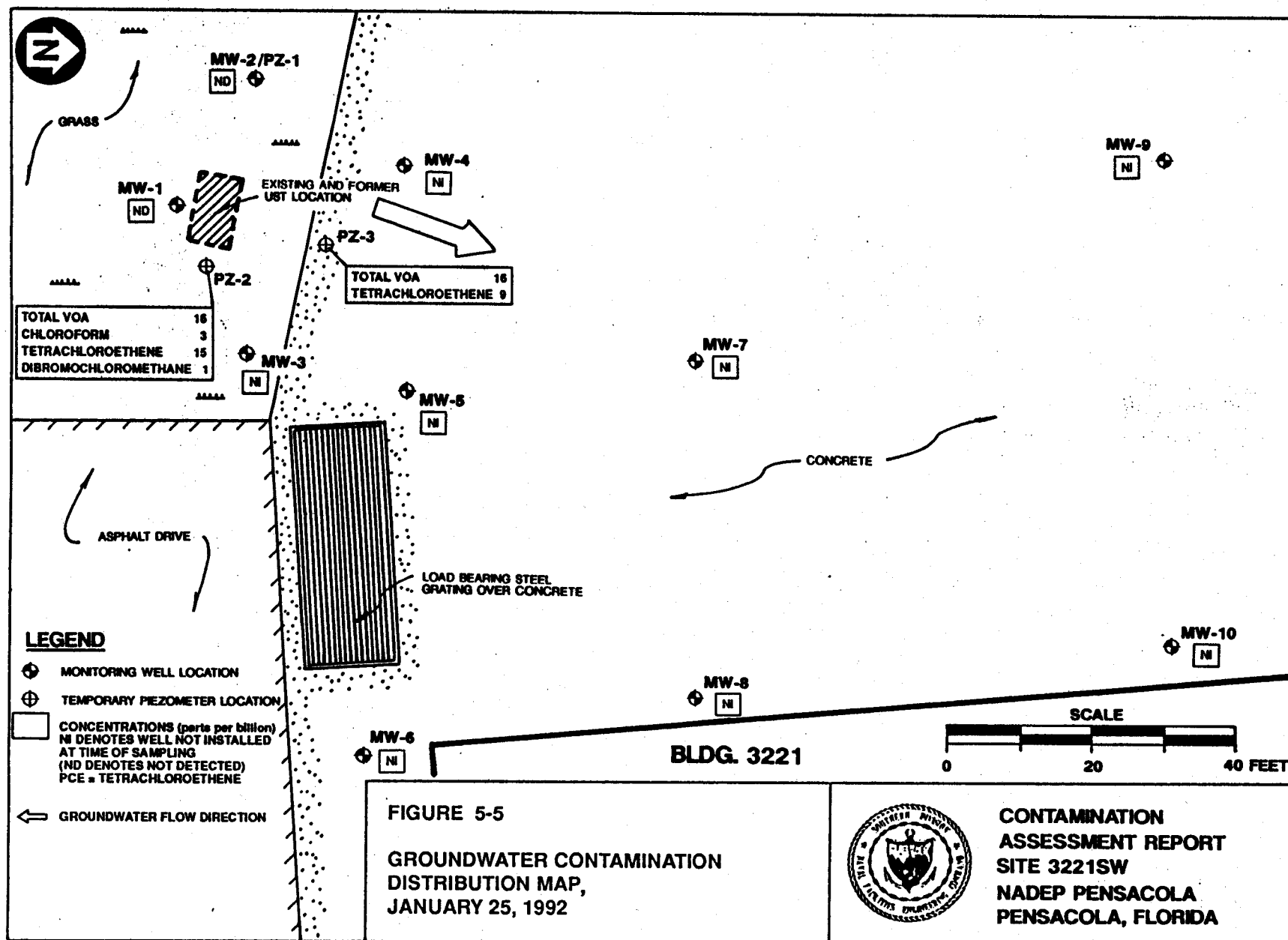
Compound	Recommended Guidance Concentration ¹	MW1	MW2	MW3	MW4	MW5	MW6	MW7	MW8	MW8 Duplicate	MW9	MW10
Methylene chloride ²	5	5	10	7	7	7	8	8	10	10	10	11
TCE	3	ND	ND	ND	ND	ND	ND	4	ND	ND	5	25
PCE	3	ND	ND	ND	ND	ND	ND	ND	3	4	ND	ND
bis(2-Ethylhexyl)phthalate	14	ND	ND	ND	ND	ND	ND	ND	10	ND	ND	ND
Tentatively identified compounds (TICs) and their estimated concentrations												
1-Methyl-2-(1-methylethyl)benzene		ND	ND	ND	ND	ND	6	ND	ND	ND	ND	ND
1-Methyl-3-(1-methylethyl)benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methyl-4-(1-methylethyl)benzene		ND	ND	ND	ND	ND	6	ND	10	ND	ND	ND
1,3,5-Trimethyl-benzene		ND	ND	ND	ND	100	13	ND	34	29	ND	ND
1,2,3,4-Tetramethyl-benzene		ND	ND	ND	ND	15	ND	ND	5	ND	ND	ND
1,2,3,5-Tetramethyl-benzene		ND	ND	ND	ND	21	ND	ND	6	ND	ND	ND
1-Ethyl-2-methyl-benzene		ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND
1,2-Diethyl-benzene		ND	ND	ND	ND	20	ND	ND	8	7	ND	ND
1,3-Diethyl-benzene		ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND
4-Ethyl-1,2-dimethyl-benzene		ND	ND	ND	ND	24	ND	ND	9	ND	ND	ND
2-Ethyl-1,3-dimethyl-benzene		ND	ND	ND	ND	42	ND	ND	ND	ND	ND	ND
2-Ethyl-1,4-dimethyl-benzene		ND	ND	ND	ND	ND	7	ND	ND	ND	ND	ND
1-Ethyl-2,4-dimethyl-benzene		ND	ND	ND	ND	ND	ND	ND	ND	9	ND	ND
Substituted benzene		ND	ND	ND	ND	14	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethene		ND	ND	ND	ND	ND	ND	ND	ND	12	ND	ND
2,3-Dihydro-1-methyl-1H-idene		ND	ND	ND	ND	26	ND	ND	12	9	ND	ND
Heptadecane-(8)-carbonic acid(1)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13
Unknown (1)		ND	ND	ND	11	ND	ND	ND	ND	ND	ND	19
Total TICs		0	0	0	11	284	32	0	84	66	0	32

¹Guidance concentration recommended by Florida Department of Environmental Regulation (February 1989).

²Methylene chloride detected in laboratory blank, trip blank, and equipment blank at 11 parts per billion (ppb), 10 ppb, and 3 ppb, respectively.

Notes: Concentrations are in parts per billion (ppb).
 ND = not detected.

TCE = trichloroethene.
 PCE = tetrachloroethene.



Methylene chloride was detected in samples collected from all wells during this sampling event at concentrations ranging from 12 to 79 ppb. This contaminant was also detected in the trip blank, equipment blank, and laboratory blank at concentrations ranging from 8 ppb to 14 ppb. Because methylene chloride is a common laboratory contaminant and is present in the blanks associated with the sampling event, its presence in the samples can be attributed to laboratory contamination.

5.2.2.2 Groundwater Laboratory Analytical Results, April 15, 1992, Sampling Event The distribution of contaminants detected in groundwater samples collected on April 15, 1992, is shown in Figure 5-6. Compounds detected in samples collected from monitoring wells include lead, chloroform, methylene chloride, and PCE.

Lead was detected only in the duplicate sample collected from well PEN-3221SW-MW1 at a concentration of 6 ppb. This concentration is well below the State target level of 50 ppb for lead.

Chloroform was detected in samples from only one well, PEN-3221SW-MW3, at a concentration of 1 ppb. This concentration is well below the State recommended guidance concentration of 100 ppb.

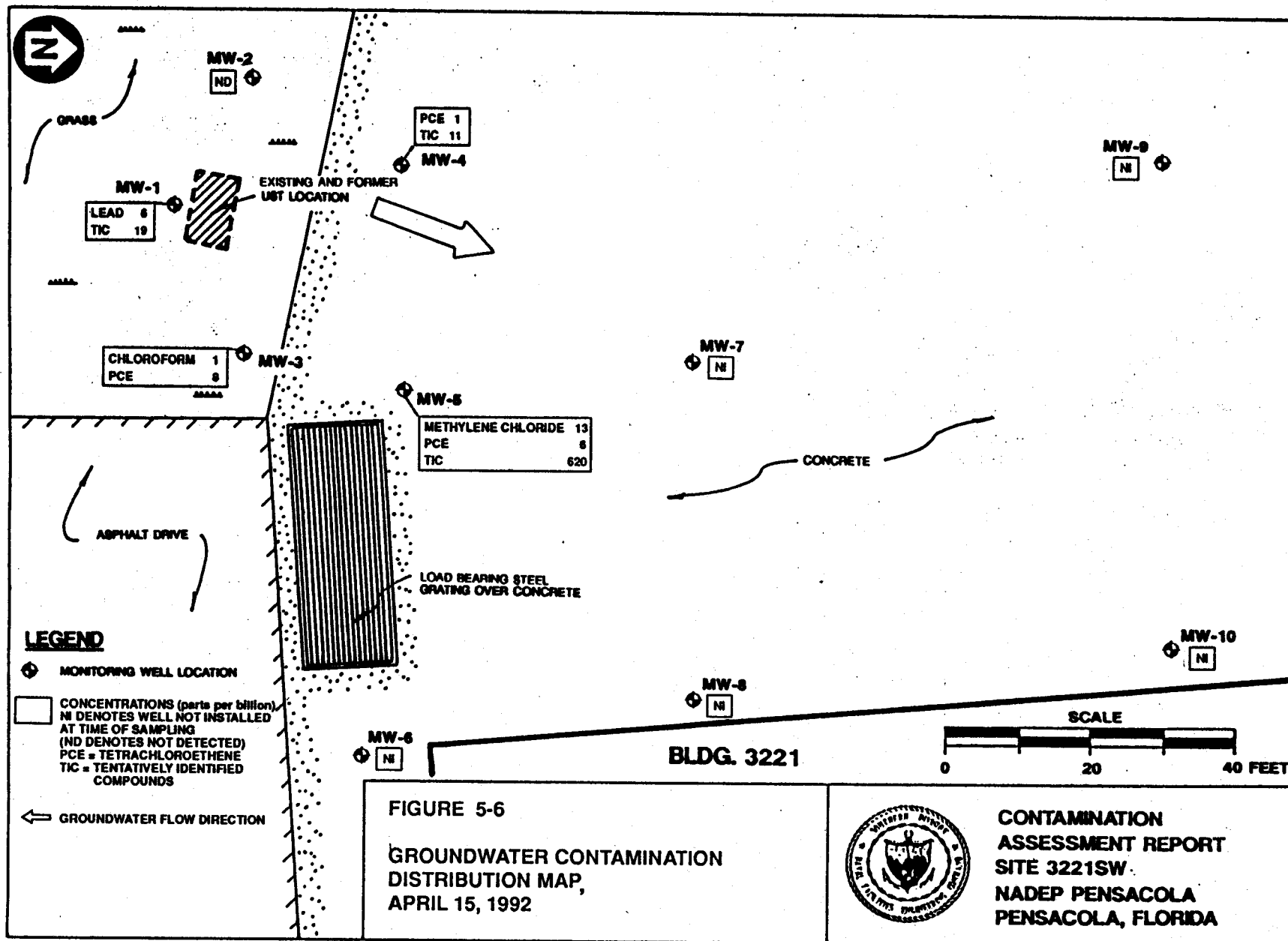
Methylene chloride was detected in monitoring well PEN-3221SW-MW5 and the laboratory blank at concentrations of 13 ppb and 1 ppb, respectively. Methylene chloride is a common laboratory contaminant and concentrations found in groundwater samples may range up to 10 times the concentration found in the laboratory blanks. The low concentrations of methylene chloride detected in groundwater samples may be the result of laboratory analytical processes.

PCE was the only contaminant detected in concentrations exceeding State recommended guidance concentrations. PCE was detected in the samples collected from wells PEN-3221SW-MW3, PEN-3221SW-MW4, and PEN-3221SW-MW5 with reported concentrations of 8 ppb, 1 ppb, and 6 ppb, respectively. Monitoring well PEN-3221SW-MW5 was the farthest downgradient well at the time of sampling.

Seventeen tentatively identified compounds (TIC) were detected in the sample collected from monitoring well PEN-3221SW-MW5 (see Table 5-5). These compounds appear to be breakdown products of fuel.

Butylcyclobutane was tentatively identified in the samples collected from monitoring wells PEN-3221SW-MW1 and PEN-3221SW-MW4. Butylcyclobutane is a possible breakdown product of fuel.

Because PCE is not currently regulated under Chapter 17-770, FAC, guidelines and was identified in several samples at concentrations above recommended guidance concentrations, site investigation was halted. A meeting was held with FDER and the USEPA to decide the manner of future investigations at the site. It was decided that the investigation could continue under Chapter 17-770, FAC, guidelines. The investigation at Site 3221SW resumed in August 1992.



5.2.2.3 Groundwater Laboratory Analytical Results, August 29, 1992, Sampling Event The distribution of contaminants detected in groundwater samples collected at the site on August 28, 1992, is shown in Figure 5-7. Compounds detected were methylene chloride, bis(2-ethylhexyl)phthalate, trichloroethene (TCE), and PCE (see Table 5-6).

Methylene chloride was detected in every sample, as well as the laboratory, trip, and equipment blanks. Concentrations ranged from 3 to 11 ppb. Because methylene chloride is a common laboratory contaminant and it was detected in the blanks associated with this sampling event, its presence in groundwater samples can be attributed to laboratory contamination.

Bis(2-ethylhexyl)phthalate was detected in only the sample collected from monitoring well PEN-3221SW-MW8 at a concentration of 10 ppb. The State recommended guidance concentration for bis(2-ethylhexyl)phthalate is 14 ppb. Bis(2-ethylhexyl)phthalate is a plasticizer, and its presence may be the result of contamination from the plastic gloves used during sample collection.

PCE and TCE were both detected at concentrations at or exceeding State recommended guidance concentrations. The State recommended guidance concentration for both PCE and TCE is 3 ppb. PCE was detected in only the sample collected from monitoring well PEN-3221SW-MW8 at a concentration of 3 ppb. TCE was detected in samples collected from wells PEN-3221SW-MW7, PEN-3221SW-MW9, and PEN-3221SW-MW10 at concentrations of 4 ppb, 5 ppb, and 25 ppb, respectively.

Eighteen TICs were detected in the samples collected from monitoring wells PEN-3221SW-MW4, PEN-3221SW-MW5, PEN-3221SW-MW6, PEN-3221SW-MW8, and PEN-3221SW-MW10. These compounds appear to be primarily fuel breakdown products.

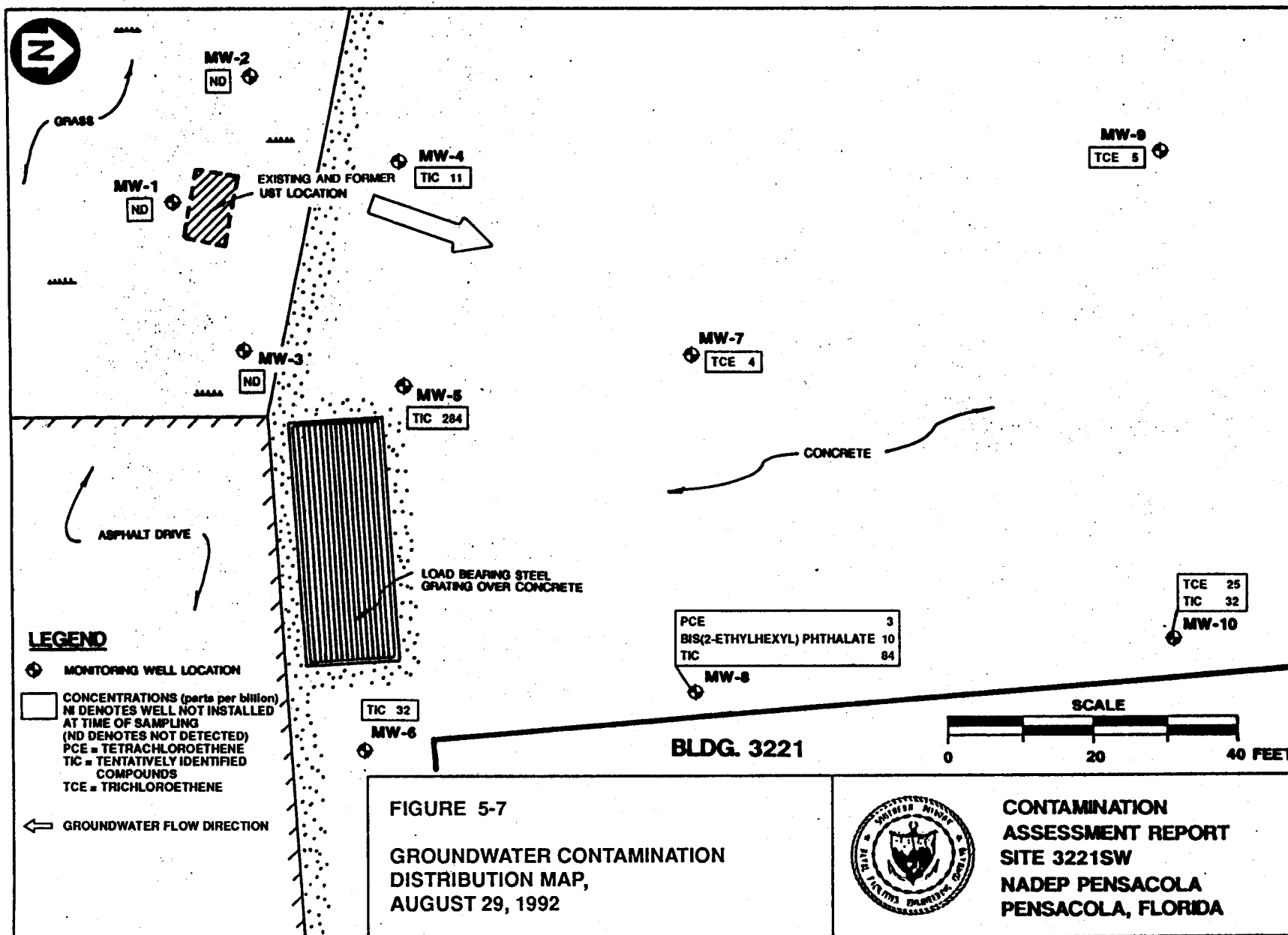
5.2.2.4 Groundwater Sample Analyses Summary Lead, toluene, methylene chloride, PCE, and TCE were identified in groundwater samples collected from April through August 1992.

Only methylene chloride, PCE, and TCE were detected at concentrations exceeding State recommended guidance concentrations. Because methylene chloride is a common laboratory contaminant and was detected in blanks associated with the sampling events, its presence can be attributed to laboratory contamination.

PCE was detected in samples collected from each sampling event. The reported concentrations, however, appear to have decreased since the initial sampling event. For example, in April 1992 PCE was detected in the samples collected from monitoring wells PEN-3221SW-MW3 and PEN-3221SW-MW5. In August 1992, PCE was not detected in the samples collected from these two wells. PCE was detected in only the sample collected from monitoring well PEN-3221SW-MW8, at a concentration that did not greatly exceed State recommended guidance concentrations.

TCE was detected only in samples collected from monitoring wells PEN-3221SW-MW7, PEN-3221SW-MW9, and PEN-3221SW-MW10 during the August 1992 sampling event.

Twenty-eight possible fuel breakdown products were tentatively identified during the April and August 1992 sampling events. Because the TICs are potential breakdown products of fuel, the former UST is a possible source of these contaminants.



PCE and TCE appear to be the only groundwater contaminants of concern at the site. The extent of PCE and TCE groundwater contamination is presently unknown. Because PCE and TCE were not detected in samples collected from monitoring wells in the vicinity of and immediately downgradient to the former UST location and are not associated with other petroleum contaminants, it appears unlikely that the former UST is the source of this contamination. A possible source is the flammable liquid storage area located approximately 100 feet west of these wells (see Figure 5-8).

5.3 POTABLE WELL SURVEY. A potable well survey was conducted to assess the risk of contamination of potable water supplies from activities at Site 3221SW. Two potable supply wells (designated as Well No. 1 and Well No. 2 in Figure 5-9) were identified at NAS Pensacola (Wilkins and others, 1985). The NAS Pensacola water supply system is used in conjunction with the Corry Field water supply system, which is located approximately 2 miles north of NAS Pensacola. According to NADEP personnel, the two NAS Pensacola wells are not currently used for potable water supply at NAS Pensacola, but are available as reserve potable water supplies should the need arise.

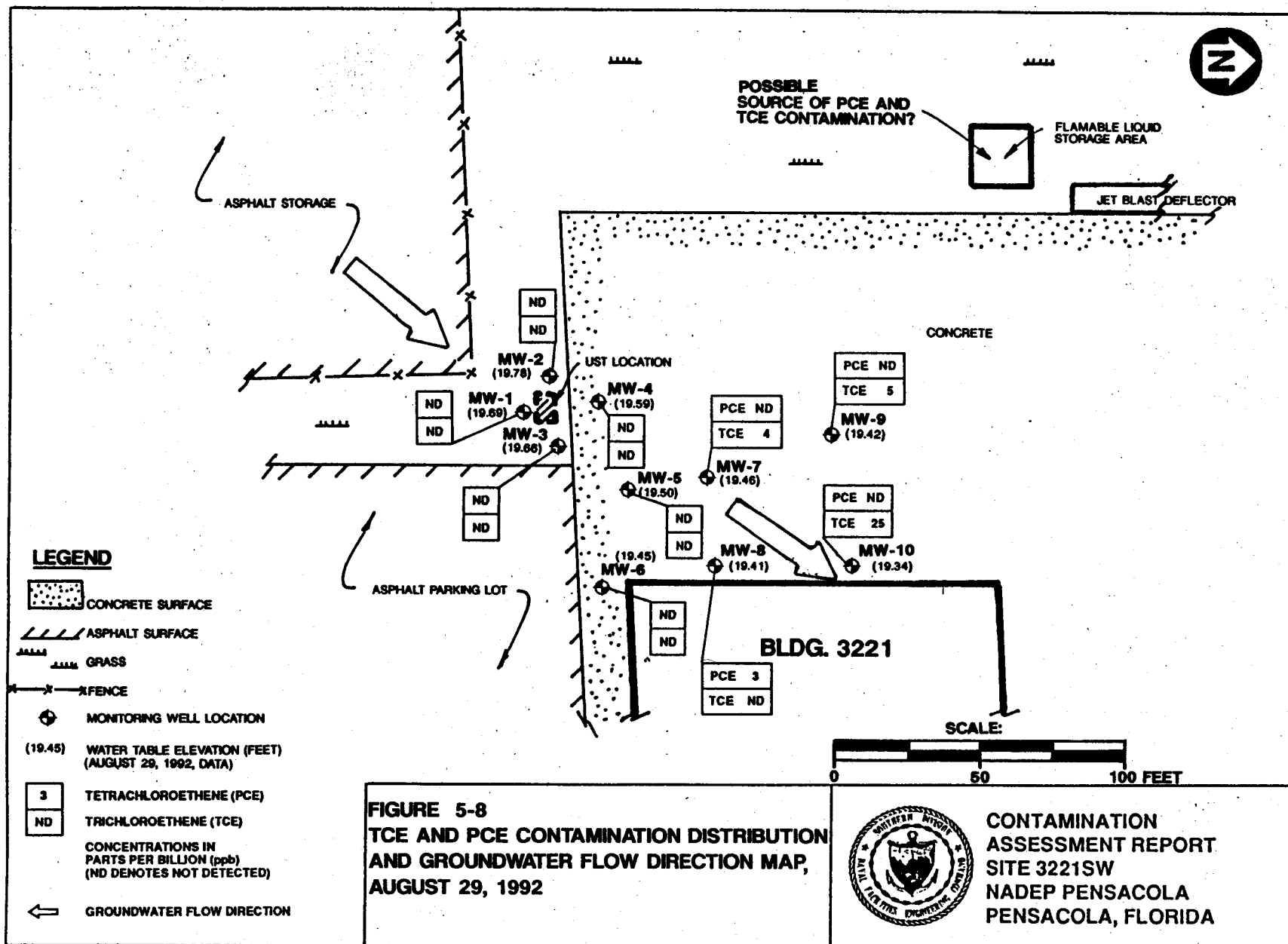
Potable well inventory data are presented in Table 5-7. Both wells at NAS Pensacola are screened in the main producing zone of the sand-and-gravel aquifer at depths ranging from 105 to 160 feet bls. There are no potable wells within a 0.25-mile radius of the site. The possibility of contamination of potable water sources from routine activities at Site 3221SW does not appear likely.

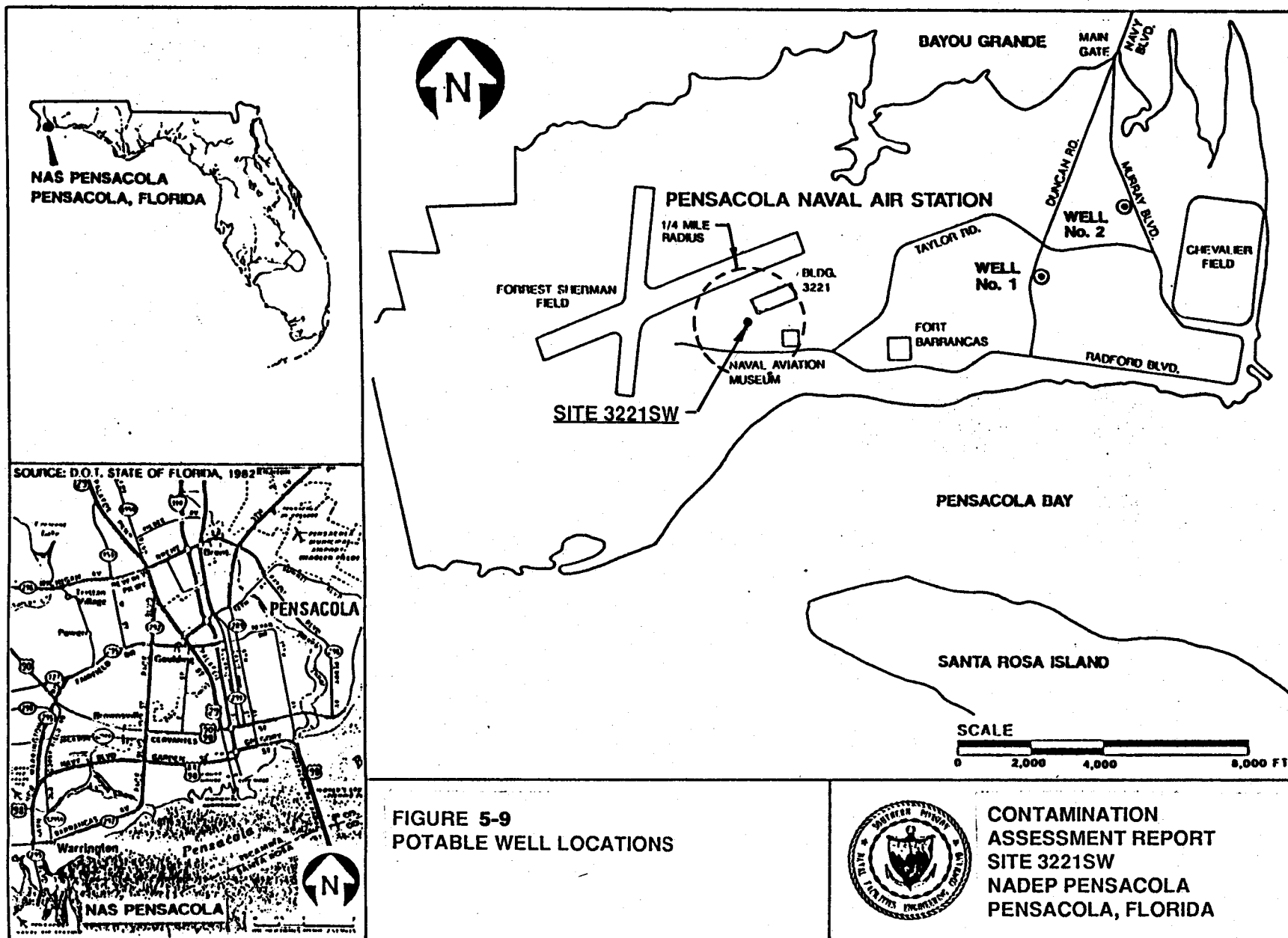
Table 5-7
Potable Well Inventory Data,
Naval Air Station, Pensacola, Florida

Contamination Assessment Report
Site 3221SW, Naval Aviation Depot
Pensacola, Florida

Well Identification Number/Local Name	Location	Total Depth (feet bls)	Screened Interval (feet bls)	Diameter Casing/Screen (inches)
302116087170201/No. 1	Sec. 1,T3S,R30W Duncan and Taylor Roads	174	105-160	24/12
302124087163601/No. 2	Sec. 1,T3S,R30W Murray and Farrar Roads	178	110-160	24/12

Note: bls = below land surface.





6.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

6.1 SUMMARY. Based on evaluation of field data and laboratory analytical results, the following is a summary of conditions at the site.

- The sediments encountered during drilling operations are predominantly comprised of very fine-grained to fine-grained quartz sand. These sediments are part of the surficial zone of the sand-and-gravel aquifer (Roaza and others, 1991).
- Groundwater beneath the site was encountered at depths ranging from approximately 7 to 9 feet bls and is classified as G-II.
- The direction of groundwater flow in the surficial zone ranges from north to northeast.
- The calculated average hydraulic gradient across the site is 5.6×10^{-3} ft/ft.
- The calculated average hydraulic conductivity at the site is 5.7×10^{-1} ft/day.
- The calculated average pore water velocity is 1.2 ft/day.
- OVA headspace analyses of soil samples indicate no soil petroleum contamination is evident.
- Laboratory total metals and TRPH analyses of soil samples indicate that soil contamination is minimal.
- Laboratory analyses of groundwater samples from the most recent sampling event of August 29, 1992, indicate that methylene chloride, TCE, and PCE are the only contaminants present in concentrations exceeding State recommended guidance concentrations.
- Concentrations of TCE and PCE compounds exceeded State recommended guidance concentrations in samples collected from monitoring wells PEN-3221SW-MW7, PEN-3221SW-MW8, PEN-3221SW-MW9, and PEN-3221SW-MW10. TCE and PCE were not detected in samples collected from monitoring wells immediately downgradient of the UST site.
- No potable water wells were identified within a 0.25-mile radius of the site.

6.2 CONCLUSIONS. The level of soil and groundwater contamination in the vicinity of the UST appears to be minimal. Groundwater contaminants exceeding State target levels or recommended guidance concentrations are methylene chloride, TCE, and PCE. The presence of methylene chloride can be attributed to laboratory contamination. Because TCE and PCE were not detected in samples collected from wells immediately downgradient of the UST location, and because these compounds were not associated with other petroleum constituents or derivatives, it appears the UST is not the source of this contamination. A

possible source of TCE and PCE may be releases associated with the flammable liquid storage area located west of the site. Because no potable wells were identified within a 0.25-mile radius of the site, groundwater contamination found at Site 3221SW is not expected to affect local potable water supplies at the base.

6.3 RECOMMENDATIONS. Because the PCE and TCE contamination found at the site does not appear to be related to leakage from the former or present USTs at Site 3221SW, a *No Further Action Plan (NFAP)* is recommended for the UST located at Site 3221SW. However, further site investigation is needed to assess the areal and vertical extent of TCE and PCE contamination.

7.0 PROFESSIONAL REVIEW CERTIFICATION

The contamination assessment contained in this report was prepared using sound hydrogeologic principles and judgment. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This Contamination Assessment Report was developed for the UST located at Site 3221SW at the Naval Aviation Depot, Naval Air Station, Pensacola, Florida, and should not be construed to apply to any other site.

Roger Durham
Professional Geologist
P.G. No. 001127

Date

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APPENDIX A
SITE CONDITIONS

Regional and Local Physiography

Florida is divided into four physiographic zones; the Coastal Lowlands, the Central Highlands, the Northern Highlands, and the Marianna Lowlands (Puri and Vernon, 1964). The Pensacola area lies entirely within the Coastal Lowlands zone, which closely parallels the Florida coastline. The Coastal Lowlands are further divided into the Atlantic, Distal, and Gulf Coastal Lowlands (Puri and Vernon, 1964). The Naval Aviation Depot (NADEP) Pensacola is located within the Gulf Coastal Lowlands. The lowlands are characterized by poor drainage and elevations less than 100 feet above mean sea level. Landforms include barrier islands, estuaries, coastal ridges, dunes, and valleys (Puri and Vernon, 1964).

Land surface altitudes at NADEP Pensacola range from sea level at the coast to greater than 30 feet above mean sea level. Surface drainage is variable, but is generally toward the nearest body of water.

Regional Hydrogeology

NADEP Pensacola is underlain by three water bearing zones. These zones include the sand-and-gravel aquifer, the Upper Floridan aquifer, and the Lower Floridan aquifer.

The sand-and-gravel aquifer is comprised of Pleistocene terrace deposits, the Pliocene Citronelle Formation (Marsh, 1966), and Miocene coarse clastics. These deposits extend from the surface to a depth of approximately 400 feet below land surface (bls) and are predominantly poorly sorted, fine-grained to coarse-grained sand interbedded with numerous layers of clay and gravel (up to 60 feet thick). There is great lithologic variability in these deposits. Clay lenses and the presence of hardpan layers within the sand-and-gravel aquifer result in the occurrence of perched water tables and artesian conditions in some areas (Musgrove and others, 1965). Groundwater flow is generally topographically controlled. Recharge to the aquifer is derived almost entirely from local rainfall. The sand-and-gravel aquifer is the sole source of potable groundwater in the Pensacola area (Roaza and others, 1991).

The sand-and-gravel aquifer is divided into three major zones: the surficial zone, the low permeability zone, and the main producing zone (Roaza and others, 1991). These designations are based on changes in permeability of the sediments comprising each zone. The surficial zone is the uppermost layer of the aquifer. It consists primarily of sand and gravel with occasional silt and clay deposits. This zone ranges in thickness from 0 to 150 feet (Roaza and others, 1991). The low permeability zone, which underlies the surficial zone, consists of various mixtures of clay, silt, sand, and gravel. Locally, this zone contains poorly sorted sand, with gravel and some clay (Roaza and others, 1991). The thickness of the zone varies from 50 to 100 feet. Individual beds of the low permeability zone are highly discontinuous, and in some areas there may be hydraulic connection between the surficial zone and the main producing zone. The main producing zone is composed of moderate to well sorted sand-and-gravel beds that are typically interbedded with beds of fine-grained sand and clay. Locally, this zone typically contains medium-grained sand and sandy clays (Roaza and others, 1991). The thickness of the main producing zone ranges from 200 to 300 feet.

The Upper Floridan aquifer is comprised of deposits correlative to the lower Miocene Tampa Formation and the upper Oligocene Chickasawhay Formation. These two formations are undifferentiated in the Pensacola area. Locally, these deposits are approximately 380 feet thick (Marsh, 1966) and are typically brown to light gray, hard, fossiliferous dolomitic limestone or dolomite with a distinctive spongy-looking texture. Locally, the overlying Pensacola Clay is approximately 1,000 feet thick and forms an effective confining unit between the sand-and-gravel aquifer and the Upper Floridan aquifer (Marsh, 1966). This confining unit has also been designated as part of the Intermediate System (Roaza and others, 1991). The Upper Floridan aquifer is recharged by local rainfall in Conecuh, Escambia, and Monroe Counties, Alabama (Healy, 1980). General groundwater flow in the Upper Floridan aquifer is to the southeast toward the Gulf of Mexico (Barr, 1987). The groundwater in the Upper Floridan aquifer is mineralized in the Pensacola area and is not used as a water supply.

The Lower Floridan aquifer is comprised of upper to middle Eocene limestones. The aquifer is approximately 500 feet thick in the vicinity (Marsh, 1966). The limestones are typically white to grayish cream, soft, and chalky. The Lower Floridan aquifer is confined from above by the Bucatunna Clay Member of the middle Oligocene Byram Formation and from below by gray shales and clays of middle Eocene age. The Bucatunna Clay, also called the Intermediate Zone, is approximately 170 feet thick in the Pensacola area (Musgrove and others, 1965). Groundwater flow in the aquifer is to the southeast toward the Gulf of Mexico (Healy, 1980). The water quality is poor because of high mineralization.

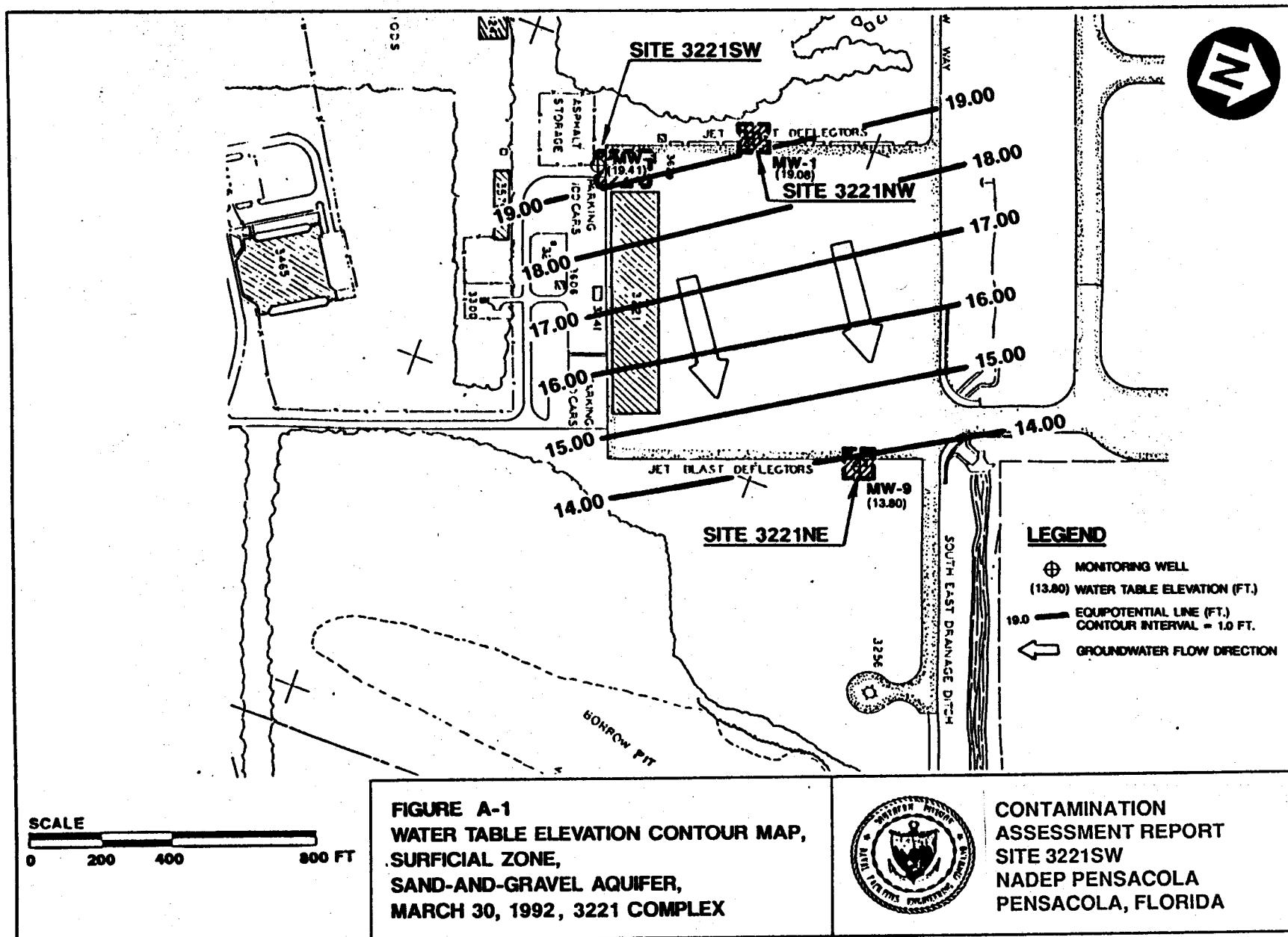
Local Hydrogeology

The surficial zone of the sand-and-gravel aquifer is the interval of primary concern at NAS Pensacola. The surficial zone extends from the surface to a depth of approximately 100 feet bls (Roaza and others, 1991). Soils from 0 to 50 feet bls encountered in investigations performed by ABB-ES at the NADEP facility are generally composed of fine-grained to very fine-grained sand, with very little silt and clay. Occasional coarse-grained sand to fine-grained gravel were encountered, and thin peat layers were found at NAS Pensacola in the Forrest Sherman Field vicinity.

Groundwater in the surficial zone is non-artesian and is encountered at depths ranging from less than 2 feet bls to greater than 20 feet bls at the NADEP facility. The depth to groundwater is mainly controlled by topography. Recharge is predominantly from local rainfall.

Figure A-1 shows the groundwater flow direction in the site vicinity on March 30, 1992, based on NADEP-wide measurements. The direction of groundwater flow in the site vicinity is predominantly to the east northeast, although variations in topography, the presence of surface water bodies, and perched water tables result in localized changes in the groundwater flow direction.

Perched water tables were observed in the Forrest Sherman Field area, west of 3221SW. Perched water tables are apparently the result of lower permeability peat layers found in this area. Perched water tables were not observed at Site 3221SW.

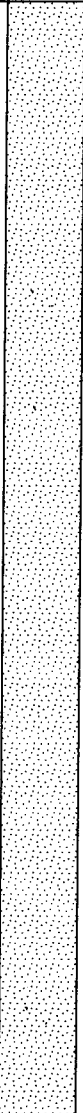
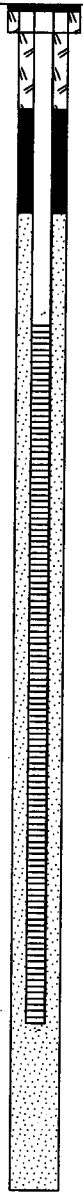


Locally, hydraulic gradients in the surficial zone vary from approximately 1×10^{-3} feet per foot (ft/ft) to 7×10^{-3} ft/ft. Gradients are generally less in the lower flat-lying areas than in the topographically higher areas to the northwest of Chevalier Field, approximately 2 miles east of site 3221SW. Additional water level measurements, taken on numerous occasions at low-elevation sites located near Pensacola Bay, indicate tidal fluctuations do not appear to alter the groundwater flow direction and do not appear to have a great effect on hydraulic gradients at NAS Pensacola.

APPENDIX B
LITHOLOGIC LOGS

TITLE: NADEP Pensacola				LOG of WELL: PEN-322ISW-MW1		BORING NO. SB1		
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-30		
CONTRACTOR: Groundwater Protection Inc.				DATE STARTED: 1/7/92		COMPLTD: 1/7/92		
METHOD: 4.25" HSA		CASE SIZE: 2 inches		SCREEN INT.: 4.75-14.75'		PROTECTION LEVEL: D		
TOC ELEV.: 27.00 FT.		MONITOR INST.: OVA		TOT DPTH: 14.75FT.		DPTH TO ∇ 7.31 FT.		
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE: 1/7/92				SITE: 322ISW		
DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5			14/24 0	SAND: tan to off-white, very fine- to fine-grained, quartz, some shell fragments.			3,3,3,5	
10			14/24 0	SAND: off-white, very fine- to fine-grained, quartz, wet.		SP	3,3,4,5	
15			14/24 0	SAND W/ PEAT: brown to dark gray, very fine- to fine-grained, mixed with organics, dark brown peat-like material from 16-16.3'.		PT	5,8,7,9	
20								

TITLE: NADEP Pensacola				LOG of WELL: PEN-322ISW-MW2		BORING NO. SB2	
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc.				DATE STARTED: 1/7/92		COMPLTD: 1/7/92	
METHOD: 4.25" HSA		CASE SIZE: 2 inches		SCREEN INT.: 4.65-14.65'		PROTECTION LEVEL: D	
TOC ELEV.: 26.94 FT.		MONITOR INST.: OVA		TOT DPTH: 14.65FT.		DPTH TO ∇ 7.16 FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE: 1/7/92				SITE: 322ISW	

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5		15/24	0	SAND: light brown to orange-tan, very fine- to fine-grained.		SP	4,5,5,8	
10		14/24	0	SAND: light brown to orange red (from 10-11.2'), fine-grained, white (from 11.2-12'), very fine- to fine-grained, wet.		PT	1,2,2,2	
15		13/24	44	SAND: off-white to light brown, fine-grained, wet. PEAT: peat-like substance, dark brown, organic.			7,5,5,7	
20								

TITLE: NADEP Pensacola				LOG of WELL: PEN-322ISW-MW3		BORING NO. SB6	
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc.				DATE STARTED: 4/9/92		COMPLTD: 4/9/92	
METHOD: 4.25" HSA		CASE SIZE: 2 inches		SCREEN INT.: 5.02-15.02'		PROTECTION LEVEL: D	
TOC ELEV.: 27.29 FT.		MONITOR INST.: OVA		TOT DPTH: 15.02FT.		DPTH TO ∇ 7.63 FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE: 4/9/92				SITE: 322ISW	

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5				0	SAND: Brown to tan, very fine- to fine-grained.		SP		
10			20/24	-	SAND: Brown to white, wet.			4,4,3,3	
15			20/24	-	SAND: White, peat at base of spoon, wet.			12,5,5,3	
							PT		

TITLE: NADEP Pensacola		LOG of WELL: PEN-322ISW-MW4	BORING NO. SB7
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7527-30
CONTRACTOR: Groundwater Protection Inc.		DATE STARTED: 4/9/92	COMPLTD: 4/9/92
METHOD: 4.25" HSA	CASE SIZE: 2 inches	SCREEN INT.: 4.97-14.97'	PROTECTION LEVEL: D
TOC ELEV.: 26.73 FT.	MONITOR INST.: OVA	TOT DPTH: 14.97FT.	DPTH TO ∇ 7.14 FT.
LOGGED BY: R. Durham	WELL DEVELOPMENT DATE: 4/9/92		SITE: 322ISW

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5		18/24	0	SAND: White to tan, very fine- to fine-grained.		SP		
10		18/24	-				1,1,2,4	
15		24/24	-	SAND: Same as above, peat at base of spoon.		PT	5,4,10,14	
20								


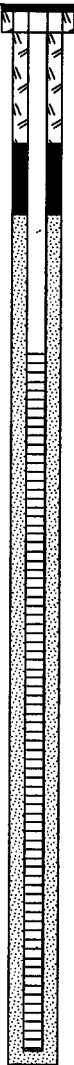

TITLE: NADEP Pensacola		LOG of WELL: PEN-322ISW-MW5	BORING NO. SB8
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7527-30
CONTRACTOR: Groundwater Protection Inc.		DATE STARTED: 4/9/92	COMPLTD: 4/9/92
METHOD: 4.25" HSA	CASE SIZE: 2 inches	SCREEN INT.: 4.95-14.95'	PROTECTION LEVEL: D
TOC ELEV.: 27.10 FT.	MONITOR INST.: OVA	TOT DPTH: 14.95FT.	DPTH TO ∇ 7.60 FT.
LOGGED BY: R. Durham	WELL DEVELOPMENT DATE: 4/9/92		SITE: 322ISW

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5		20/24	0	SAND: White to tan, very fine- to fine-grained.		SP	3,3,4,4	
10		12/24	-	SAND: White, very fine- to fine-grained, rotten egg odor.			2,1,1,2	
15		24/24	-	SAND: White to brown, very fine- to fine-grained, wet.			7,9,10,10	
20								


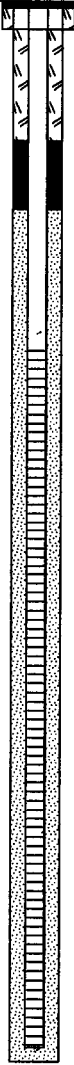


TITLE: NADEP Pensacola		LOG of WELL: PEN-322ISW-MW6	BORING NO. SB9
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7527-40
CONTRACTOR: Groundwater Protection Inc./Orlando, FL		DATE STARTED: 8/25/92	COMPLTD: 8/25/92
METHOD: 4.25" HSA	CASE SIZE: 2 inches	SCREEN INT.: 5.0-15.0'	PROTECTION LEVEL: D
TOC ELEV.: 27.50 FT.	MONITOR INST.: OVA	TOT DPTH: 15FT.	DPTH TO ∇ 8.05 FT.
LOGGED BY: B. Anderson	WELL DEVELOPMENT DATE: 8/26/92		SITE: 322ISW

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
					CONCRETE				
5				0	SAND: brown, very fine- to fine-grained, mixed with shells.				
10					SAND: light brown to white, very fine- to fine-grained, slight sulfur odor.		SP		
15									
20									

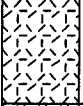
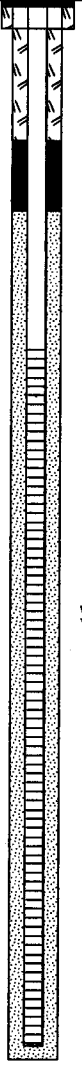
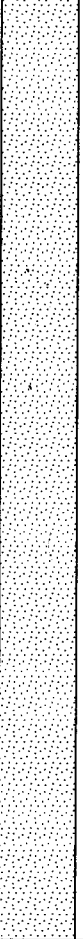
TITLE: NADEP Pensacola		LOG of WELL: PEN-3221SW-MW7	BORING NO. SB10
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7527-40
CONTRACTOR: Groundwater Protection Inc./Orlando, FL		DATE STARTED: 8/25/92	COMPLTD: 8/25/92
METHOD: 4.25" HSA	CASE SIZE: 2 inches	SCREEN INT.: 5.0-15.0'	PROTECTION LEVEL: D
TOC ELEV.: 27.10 FT.	MONITOR INST.: OVA	TOT DPTH: 15FT.	DPTH TO ∇ 7.64 FT.
LOGGED BY: B. Anderson	WELL DEVELOPMENT DATE: 8/25/92		SITE: 3221SW

DEPTH F.T.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
					CONCRETE				
5				0	SAND: white, very fine- to fine-grained, loose, damp.		SP		
10					SAND: white, very fine- to fine-grained, loose, sand grades to peat, slight sulfur odor.				
15									
20									

TITLE: NADEP Pensacola				LOG of WELL: PEN-322ISW-MW8		BORING NO. SB11	
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-40	
CONTRACTOR: Groundwater Protection Inc./Orlando, FL				DATE STARTED: 8/25/92		COMPLTD: 8/25/92	
METHOD: 4.25" HSA		CASE SIZE: 2 inches		SCREEN INT.: 5.0-15.0'		PROTECTION LEVEL: D	
TOC ELEV.: 27.69 FT.		MONITOR INST.: OVA		TOT DPTH: 15FT.		DPTH TO ∇ 8.28 FT.	
LOGGED BY: B. Anderson		WELL DEVELOPMENT DATE: 8/25/92				SITE: 322ISW	

DEPTH F.T.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
					CONCRETE				
					SAND: brown, very fine- to fine-grained, mixed with shell material.				
5							SP		
10					SAND: light brown to white, very fine- to fine-grained, slight sulfur odor.				
15									
20									

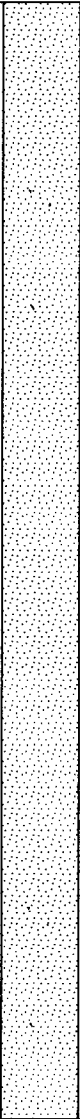
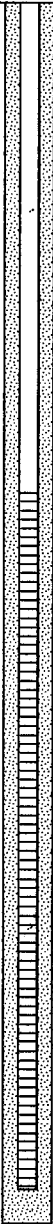

TITLE: NADEP Pensacola				LOG of WELL: PEN-322ISW-MW9		BORING NO. SB12	
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-40	
CONTRACTOR: Groundwater Protection Inc./Orlando, FL				DATE STARTED: 8/27/92		COMPLTD: 8/27/92	
METHOD: 4.25" HSA		CASE SIZE: 2 inches		SCREEN INT.: 5.0-15.0'		PROTECTION LEVEL: D	
TOC ELEV.: 27.28 FT.		MONITOR INST.: OVA		TOT DPTH: 15FT.		DPTH TO ∇ 8.86 FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE: 8/27/92				SITE: 322ISW	

DEPTH F.T.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
					CONCRETE				
5				0			SP		
10					SAND: white to light brown, very fine- to fine-grained.				
15									
20									

TITLE: NADEP Pensacola				LOG of WELL: PEN-3221SW-MW10		BORING NO. SB13	
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-40	
CONTRACTOR: Groundwater Protection Inc./Orlando, FL				DATE STARTED: 8/27/92		COMPLTD: 8/27/92	
METHOD: 4.25" HSA		CASE SIZE: 2 inches		SCREEN INT.: 5.0-15.0'		PROTECTION LEVEL: D	
TOC ELEV.: 27.73 FT.		MONITOR INST.: OVA		TOT DPTH: 15FT.		DPTH TO ∇ 8.39 FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE: 8/27/92				SITE: 3221SW	

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
					CONCRETE	[Pattern]			[Diagram]
					SAND: light brown to gray, very fine- to fine-grained.	[Pattern]	SP		
5				0		[Pattern]			
					SAND: light gray to white, very fine- to fine-grained, wet.	[Pattern]			
10						[Pattern]			
15						[Pattern]			
20						[Pattern]			





TITLE: NADEP Pensacola		LOG of WELL: PEN-322ISW-PZ1		BORING NO. SB2	
CLIENT: SOUTHNAVFACENGCOM				PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc.			DATE STARTED: 1/7/92		COMPLTD: 1/7/92
METHOD: 4.25" HSA		CASE SIZE: 2 inches		SCREEN INT.: 7.0-17.0'	
TOC ELEV.: 29.94 FT.		MONITOR INST.: OVA		TOT DPTH: 17.0 FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE: 1/8/92			SITE: 322ISW

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5		15/24	0	SAND: light brown to orange tan, very fine- to fine-grained.		SP	4,5,5,8	
10		14/24	0	SAND: off-white to light brown, very fine- to fine-grained.			1,2,2,2	
15		13/24	44	PEAT: dark brown peat-like material, organic.			PT	
20								

TITLE: NADEP Pensacola		LOG of WELL: PEN-3221SW-PZ2		BORING NO. SB3	
CLIENT: SOUTHNAVFACENGCOM				PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc.			DATE STARTED: 1/7/92		COMPLTD: 1/7/92
METHOD: 4.25" HSA		CASE SIZE: 2 inches	SCREEN INT.: 7.0-17.0'	PROTECTION LEVEL: D	
TOC ELEV.: 30.20 FT.		MONITOR INST.: OVA	TOT DPTH: 17.0FT.	DPTH TO ∇ 10.82 FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE: 1/8/92		SITE: 3221SW	

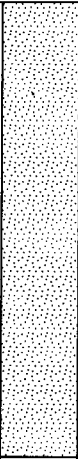
DEPTH F.T.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5		15/24	0	CLAYEY SAND: orange-red to yellow-brown sand, cream and red mottled sandy clay at 5.7-6.0'.		SC		
				SAND: tan, very fine- to fine-grained.		SP	3,4,3,3	
10		12/24	0	SAND: orange-brown to white, wet.				
				CLAY: 3cm clays, cream colored.		CL	2,2,1,2	
				SAND: white, fine- to medium-grained wet.		SP		
15		14/24	23	SAND: white, very fine- to fine-grained, wet.			4,5,5,6	
				PEAT: peat-like material, dark brown, decaying odor.		PT		

TITLE: NADEP Pensacola				LOG of WELL: PEN-3221SW-PZ3		BORING NO. SB4	
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc.				DATE STARTED: 1/8/92		COMPLTD: 1/8/92	
METHOD: 4.25" HSA		CASE SIZE: 2 inches		SCREEN INT.: 7.0-17.0'		PROTECTION LEVEL: D'	
TOC ELEV.: 29.67 FT.		MONITOR INST.: OVA		TOT DPTH: 17.0FT.		DPTH TO ∇ 10.29 FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE: 1/9/92				SITE: 3221SW	

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
					CONCRETE				
							SP		
					SAND: white to light yellow-tan, very fine- to fine-grained.				
5			24/24	0	SAND: off-white to light tan, very fine- to fine-grained.				
10			12/24	0	SAND: off-white, very fine- to fine-grained.				
15			12/24	10	PEAT: dark brown, organic odor.				
							PT		
20									

TITLE: NADEP Pensacola				LOG of WELL: PEN-3221SW-PZ4				BORING NO. SB5			
CLIENT: SOUTHNAVFACENGCOM								PROJECT NO: 7527-30			
CONTRACTOR: Groundwater Protection Inc.						DATE STARTED: 1/13/92				COMPLTD: 1/13/92	
METHOD: 4.25" HSA			CASE SIZE: 2 inches			SCREEN INT.: 10.0-20.0'			PROTECTION LEVEL: D		
TOC ELEV.: 33.62 FT.			MONITOR INST.: OVA			TOT DPTH: 20.0FT.			DPTH TO ∇ 14.18 FT.		
LOGGED BY: R. Durham			WELL DEVELOPMENT DATE: NA						SITE: 3221SW		
DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA		
5					SAND: light brown to gray, fine- to medium-grained.		SP				
10				SAND: tan, fine- to medium-grained, damp.							
15											
20					SAND: light gray to white, fine- to medium-grained, damp to wet.						

TITLE: NADEP Pensacola				LOG of WELL:		BORING NO. SB14	
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc.				DATE STARTED: 12/28/92		COMPLTD: 12/28/92	
METHOD: Hand auger		CASE SIZE:		SCREEN INT.:		PROTECTION LEVEL: D	
TOC ELEV.: FT.		MONITOR INST.: OVA		TOT DPTH: 6.5FT.		DPTH TO ∇ FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE:				SITE: 3221SW	

DEPTH F.T.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
					SAND: tan to light brown, very fine- to fine-grained, quartz, no odor		SP		
		X		1					
		X		0					
5		X		0					
10									
15									
20									

TITLE: NADEP Pensacola				LOG of WELL:		BORING NO. SB15	
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc.				DATE STARTED: 12/28/92		COMPLTD: 12/28/92	
METHOD: Hand auger		CASE SIZE:		SCREEN INT.:		PROTECTION LEVEL: D	
TOC ELEV.: FT.		MONITOR INST.: OVA		TOT DPTH: 6FT.		DPTH TO ∇ FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE:				SITE: 3221SW	

DEPTH F.T.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
							SP		
				0					
				0	SAND: light brown, very fine- to fine-grained, no odor.				
5									
10									
15									
20									

TITLE: NADEP Pensacola				LOG of WELL:		BORING NO. SB16	
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc.				DATE STARTED: 12/28/92		COMPLTD: 12/28/92	
METHOD: Hand auger		CASE SIZE:		SCREEN INT.:		PROTECTION LEVEL: D	
TOC ELEV.: FT.		MONITOR INST.: OVA		TOT DPTH: 6FT.		DPTH TO ∇ FT.	
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE:				SITE: 3221SW	

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
							SP		
				3					
				0					
5				0	SAND: tan, very fine- to fine-grained, no odor.				
10									
15									
20									

TITLE: NADEP Pensacola				LOG of WELL:		BORING NO. SB17			
CLIENT: SOUTHNAVFACENGCOM						PROJECT NO: 7527-30			
CONTRACTOR: Groundwater Protection Inc.				DATE STARTED: 12/28/92		COMPLTD: 12/28/92			
METHOD: Hand auger		CASE SIZE:		SCREEN INT.:		PROTECTION LEVEL: D			
TOC ELEV.: FT.		MONITOR INST.: OVA		TOT DPTH: 6FT.		DPTH TO ▽ FT.			
LOGGED BY: R. Durham		WELL DEVELOPMENT DATE:				SITE: 3221SW			
DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5				1	SAND: tan, very fine- to fine-grained, no odor.		SP		
				0					
				0					
10									
15									
20									

APPENDIX C

INVESTIGATIVE METHODOLOGIES AND PROCEDURES

Soil Boring Methods

Boreholes were advanced using 4.25-inch inside diameter (ID), hollow-stem augers using a rotary drill rig. Discrete soil samples were collected from each borehole using a standard penetration test (SPT) split-spoon sampler. SPT samples were generally collected at 5-foot intervals to the total depth of the well. The soil samples collected above the water table were placed in 16-ounce glass jars and head space analyses were performed using an organic vapor analyzer (OVA) with a flame ionization detector (FID), following Florida Department of Environmental Regulation (FDER), Chapter 17-770.200(2), Florida Administrative Code (FAC), guidelines. Soil samples from below the water table were analyzed using a portable gas chromatograph (GC) calibrated to detect benzene, ethylbenzene, toluene, and xylene (BETX) to the part per billion (ppb) level. The purpose of the screening procedure was to optimize monitoring well placement during the investigation.

Monitoring Well Construction

Permanent monitoring wells were installed in 10 of the boreholes drilled at the site. Monitoring wells PEN-3221SW-MW1 through PEN-3221SW-MW10 are constructed of 2-inch ID, schedule 40, polyvinyl (PVC) casing with flush-threaded joints and 10 feet of 0.010-inch machine-slotted screen. PVC well casings extend from the top of the screen to land surface. A 20/30 grade silica sand filter pack was placed in the annular space to approximately 2 to 3 feet above the top of the screen. A 1- to 2-foot thick bentonite seal was then placed on top of the filter pack. The remaining annular space was grouted to the surface with a neat cement grout. A protective traffic-bearing vault was installed to complete each well location. In concreted areas, the well pad consists of 6-inch thick reinforced concrete around the traffic-bearing vault to the depth of the surrounding concrete. Each monitoring well is equipped with a locking well cap and a padlock. Figure C-1 depicts a typical monitoring well installation for the site.

Temporary monitoring wells were installed in four of the boreholes drilled at the site. Temporary wells PEN-3221SW-PZ1 through PEN-3221SW-PZ4 were constructed of the same casing and screen materials as permanent wells. The filter pack consisted of natural sand, and no grout or bentonite were used. After data collection, PEN-3221SW-PZ2 was upgraded to a permanent well, PEN-3221SW-MW2. The remaining temporary wells were removed and the boreholes were backfilled to the land surface with natural sand.

Water Level Measurements

Groundwater levels were measured using an electric water level indicator and an engineering tape divided into increments of 0.01 foot. The wells were checked for the presence of free product by visual observation of a groundwater sample taken from each well using an extruded Teflon™ bailer. Water level elevations were calculated by subtracting the measured depth to groundwater from the elevation at the top of the well casing.

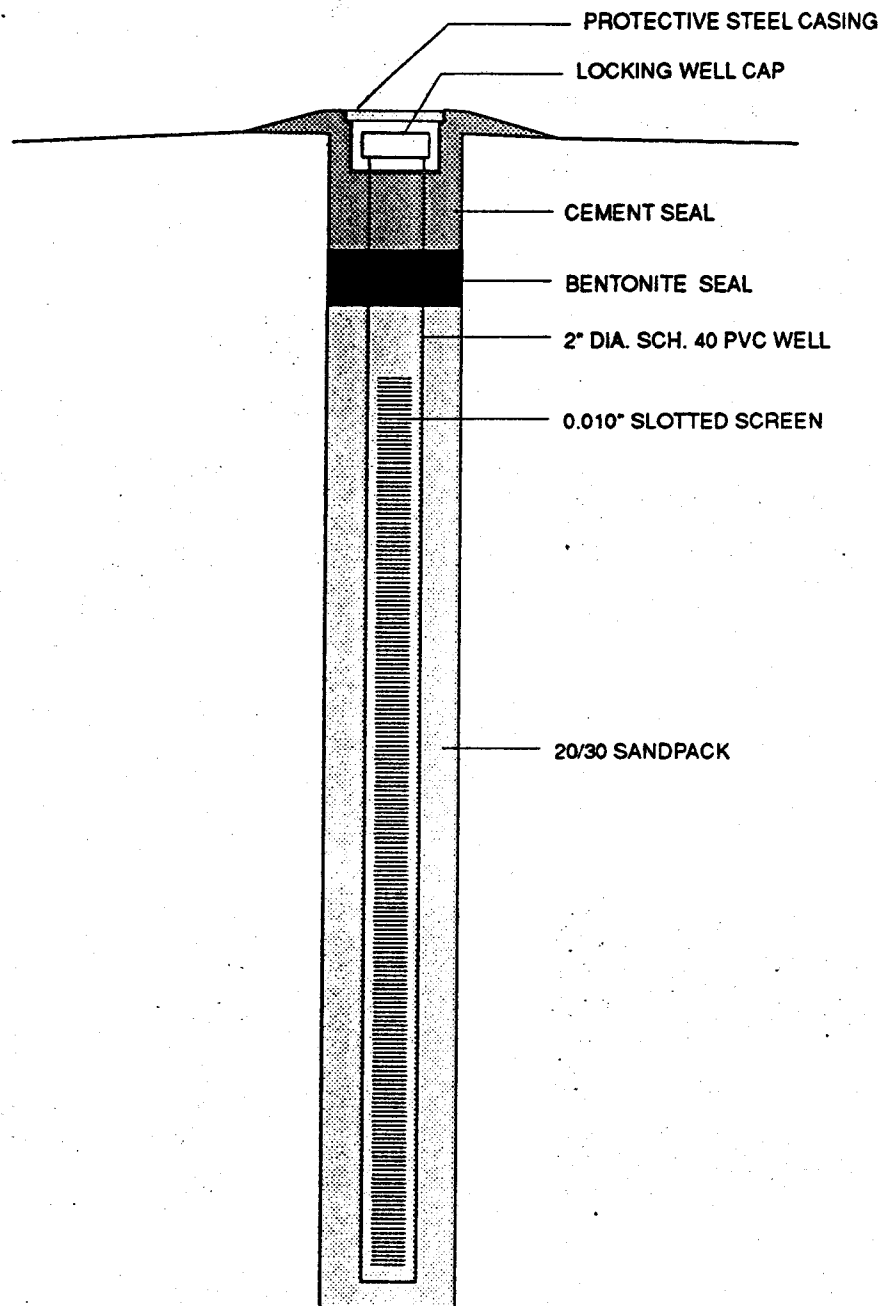


FIGURE C-1

**MONITORING WELL
CONSTRUCTION DIAGRAM**



**CONTAMINATION
ASSESSMENT REPORT
SITE 3221SW
NADEP PENSACOLA
PENSACOLA, FLORIDA**

Groundwater Sampling

Groundwater samples were collected in accordance with ABB Environmental Services, Inc. (ABB-ES), FDER-approved Comprehensive Quality Assurance Plan (CompQAP). The monitoring wells were purged with a Teflon™ bailer. Purging continued until five well volumes had been removed from the well. Groundwater samples were collected using an extruded Teflon™ bailer. The samples were placed into appropriate containers, properly preserved, and placed on ice. Samples were then shipped to Wadsworth/ALERT Laboratories, Inc., in Tampa, Florida. All groundwater samples collected were analyzed for constituents of the waste oil analytical group as outlined in FDER Chapter 17-770, FAC.

Slug Test Procedures

The slug test developed by Bouwer and Rice (1976) measures the saturated hydraulic conductivity (K) using a single well. The test method used is termed a "rising head" test and is performed by quickly withdrawing a volume of water (slug) from the well and measuring the subsequent rate of the rising water level in the well. Bouwer (1989) recommends the rising head slug test for wells with screened intervals that are only partially submerged or partially penetrate unconfined aquifers.

The slug was constructed of 1-inch outside diameter PVC pipe, 5 feet in length, filled with sand, and capped watertight at both ends. The water level changes in the monitoring wells were recorded using a data logger and pressure transducer. The pressure transducer was suspended less than 1 foot above the bottom of the well and an initial water level was recorded prior to beginning the test. The slug was then lowered into the well to a depth below the original water table. Water levels were then observed until they stabilized at the original level. Generally, recovery occurred within 3 to 4 seconds. Following stabilization, the slug was quickly removed and water level measurements were recorded over time until the water level returned to the original level. Three rising head tests were conducted for each well in order to obtain an average recovery response.

APPENDIX D
AQUIFER PARAMETER CALCULATIONS

Aquifer Parameter Calculations

Hydraulic gradient

Water table elevations were plotted on a map of the site. A water table contour map was drawn with flow lines (depicting groundwater flow direction) perpendicular to the groundwater elevation contours. The average groundwater hydraulic gradient was calculated by subtracting the differences in groundwater elevation (in feet) between two points on the map and dividing the elevation difference by the distance between the two points to obtain a resulting gradient in feet per foot. Water elevation data collected on May 20 and August 29, 1992, were used to calculate hydraulic gradients at the site. For each date, three traverses were made perpendicular to equipotential contour lines to calculate an average site hydraulic gradient. For each traverse, the hydraulic gradient was calculated as follows:

$$i = \frac{(h_1 - h_2)}{d} \quad (1)$$

where

- i = hydraulic gradient (feet per foot [ft/ft]),
- h_1 = water table elevation, upgradient (feet),
- h_2 = water table elevation, downgradient (feet), and
- d = horizontal distance (feet) between h_1 and h_2 along a flow line.

Hydraulic gradients calculated in this manner varied from 4.4×10^{-3} ft/ft to 7.4×10^{-3} ft/ft. The average hydraulic gradient at the site was calculated to be 5.6×10^{-3} ft/ft.

Hydraulic conductivity

Hydraulic conductivity from slug test data was calculated following the methods of Bouwer and Rice (1976) and Bouwer (1989) for partially penetrating wells screened in unconfined aquifers. The following well information is needed to assess the hydraulic conductivity:

- radius of well casing (r_c),
- r_w = radius of borehole (r_c plus radius of the sand pack surrounding the well screen),
- length of screened interval below the water table (L_s),
- effective well radius (r_e),
- depth of well below the water table (L_w),
- depth to confining unit or bottom of aquifer below the static water table (H), and

- plot of time versus the logarithm of y, where y is the difference between the static water level outside the well and the water level inside the well.

Figure D-1 is a well diagram depicting most of the aquifer and well parameters. Calculations were made assuming that $L_w < H$. Hydraulic conductivity, K, was calculated as follows:

$$K = [R_c^2 \ln(\frac{r_e}{r_w}) - 2L_w] [\frac{1}{t} \ln(\frac{y_0}{y_t})] \quad (2)$$

where

y_0 = y at time zero, and
 y_t = y at time t.

The effective well radius, r_e , and the term $[(1/t)\ln(y_0/y_t)]$ were derived by using the computer program AQTESOLV™ (Geraghty & Miller, Inc., 1989). This computer program follows procedures and assumptions outlined by Bouwer (1989).

Slug test graphs are attached at the end of this appendix. Values of y were calculated for a particular time, t, and plotted on the graph. The computer program selects a "best-fit" line through the data points by linear regression along a "straight-line" portion of the graph. The slope of the "best-fit" line is used to calculate the hydraulic conductivity, K.

Three slug tests each were performed inside well PEN-3221SW-MW1. Hydraulic conductivity, K, is reported in feet per minute (ft/min) on the slug test graphs, and was recalculated to feet per day (ft/day). K was found to vary from 4.9×10^1 ft/day to 7.1×10^1 ft/day with an average K of 5.7×10^1 ft/day.

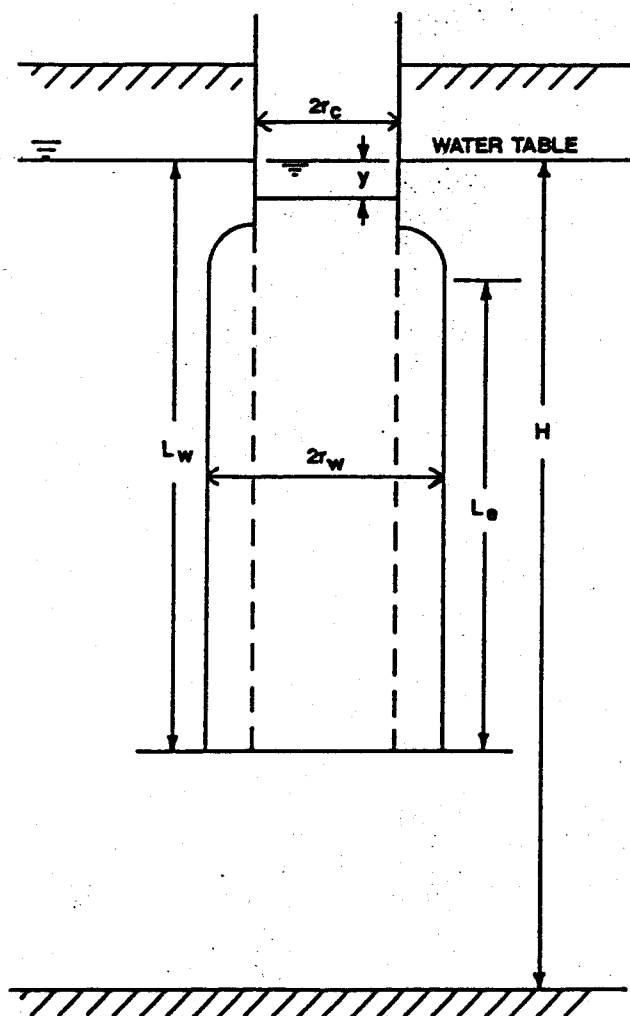
Average pore water velocity

Estimates of average pore water velocity were obtained using the following formula:

$$V = \frac{(K \cdot i)}{n} \quad (3)$$

where

V = seepage velocity in ft/day,
 K = hydraulic conductivity in ft/day,
 i = hydraulic gradient, and
 n = estimated porosity.



- r_c - radius of well.
- r_w - radius of well + total thickness of the sand/gravel pack.
- L_e - length of screened interval below the water table.
- L_w - depth of well below water table.
- H - depth to confining unit below the water table.
- y - difference between static water level outside well and water level inside well.

FIGURE D-1

**DEFINITIONS OF SLUG TEST
PARAMETERS (from Bouwer, 1989)**



**CONTAMINATION
ASSESSMENT REPORT
SITE 3221SW
NADEP PENSACOLA
PENSACOLA, FLORIDA**

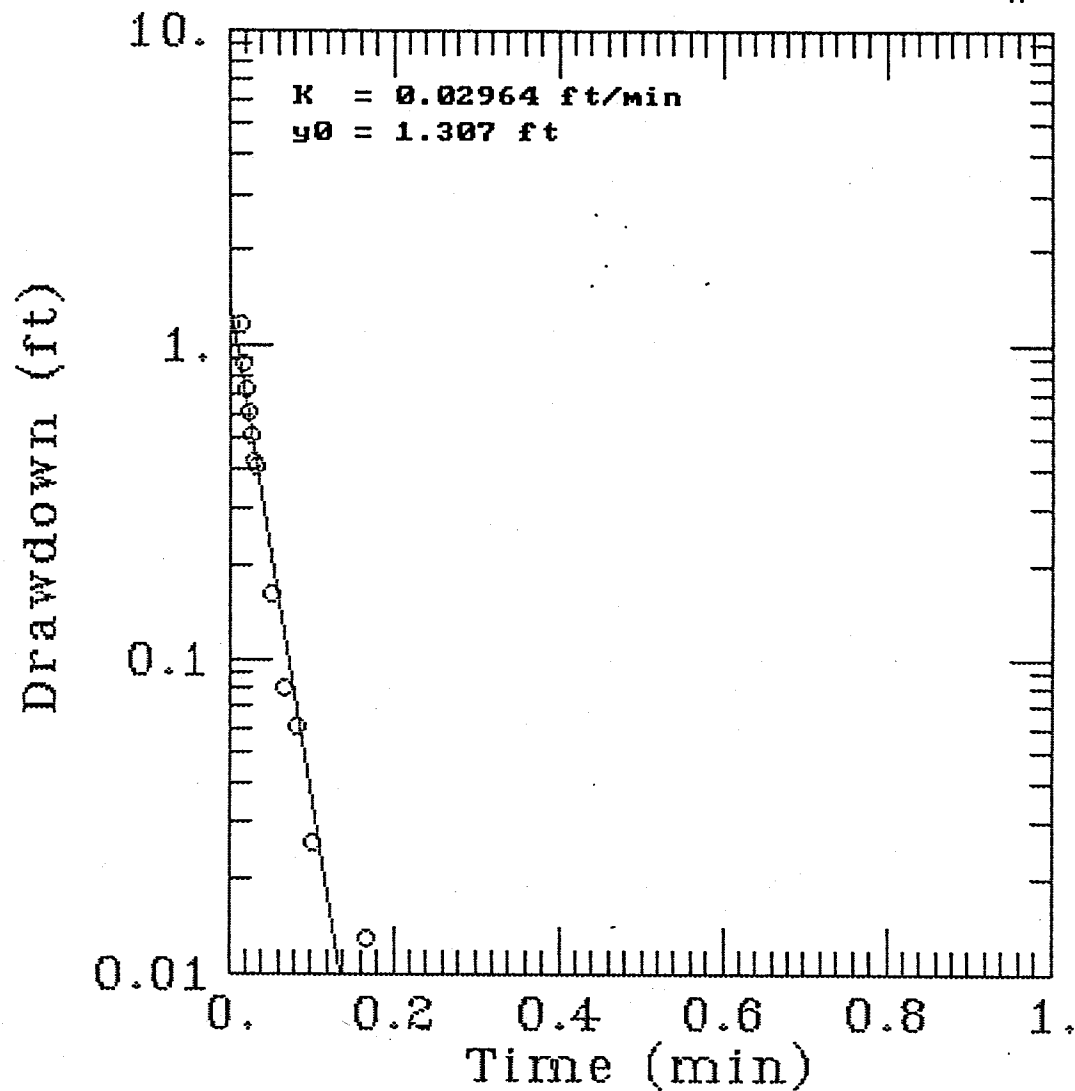
Porosities of unconsolidated sands range from 25 to 50 percent (Freeze and Cherry, 1979). Using an estimated porosity (n) of 30 percent, an average hydraulic gradient of 5.6×10^{-3} , and an average hydraulic conductivity of 5.7×10^1 ft/day, the average pore water velocity is calculated as follows:

$$v = \frac{5.7 \times 10^1 \text{ ft/day} \times 5.6 \times 10^{-3} \text{ ft/ft}}{0.30}$$

$$v = 1.2 \text{ ft/day}$$

SLUG TEST PLOTS

PEN-3221SW-MW-1 RUN #1



AQTESOLV



GERAGHTY
& MILLER, INC.



Modeling Group

A Q T E S O L V R E S U L T S
Version 1.10

08/05/92

14:29:03

=====

TEST DESCRIPTION

Data set..... A:3221SW11.SET
Data set title..... PEN-3221SW-MW-1 RUN #1

Knowns and Constants:

No. of data points.....	12
Radius of well casing.....	0.083
Radius of well.....	0.334
Aquifer saturated thickness.....	7.35
Well screen length.....	10
Static height of water in well.....	7.35
Log(Re/Rw).....	2.372
A, B, C.....	0.000, 0.000, 1.967

=====

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

=====

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	2.9639E-002
y0 =	1.1722E+000

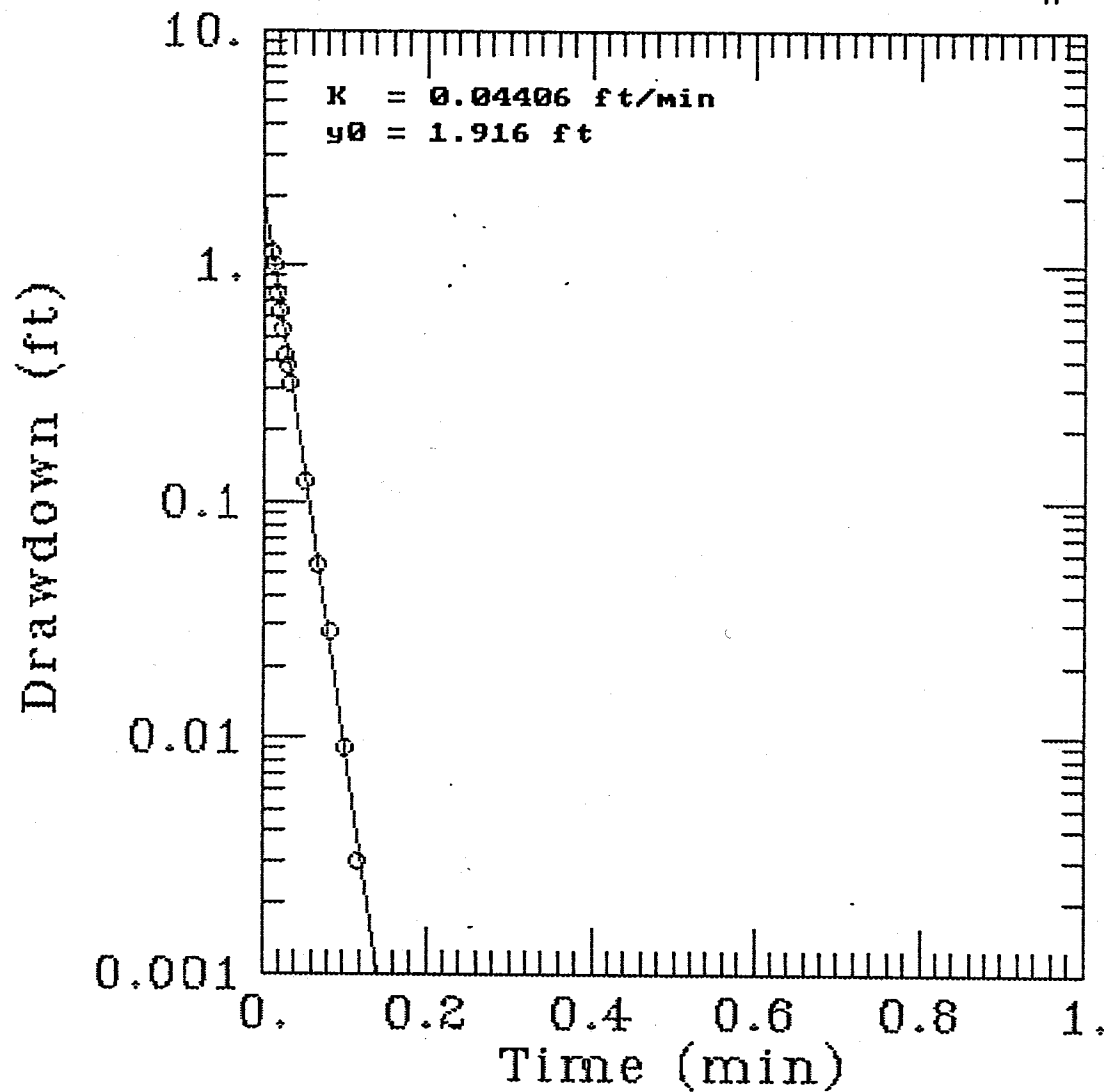
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TYPE CURVE DATA

K =	2.96393E-002
y0 =	1.30739E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
-----	-----	-----	-----	-----	-----
0.000E+000	1.307E+000	1.000E+000	2.310E-016		

PEN-3221SW-MW-1 RUN #2



AQTESOLV



GERAGHTY
& MILLER, INC.



Modeling Group

=====

A Q T E S O L V R E S U L T S
Version 1.10

08/05/92

14:37:19

=====

TEST DESCRIPTION

Data set..... A:3221SW12.SET
Data set title..... PEN-3221SW-MW-1 RUN #2

Knowns and Constants:

No. of data points..... 13
Radius of well casing..... 0.083
Radius of well..... 0.334
Aquifer saturated thickness..... 7.35
Well screen length..... 10
Static height of water in well..... 7.35
Log(Re/Rw)..... 2.372
A, B, C..... 0.000, 0.000, 1.967

=====

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

=====

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

Estimate
K = 4.4058E-002
y0 = 1.1722E+000

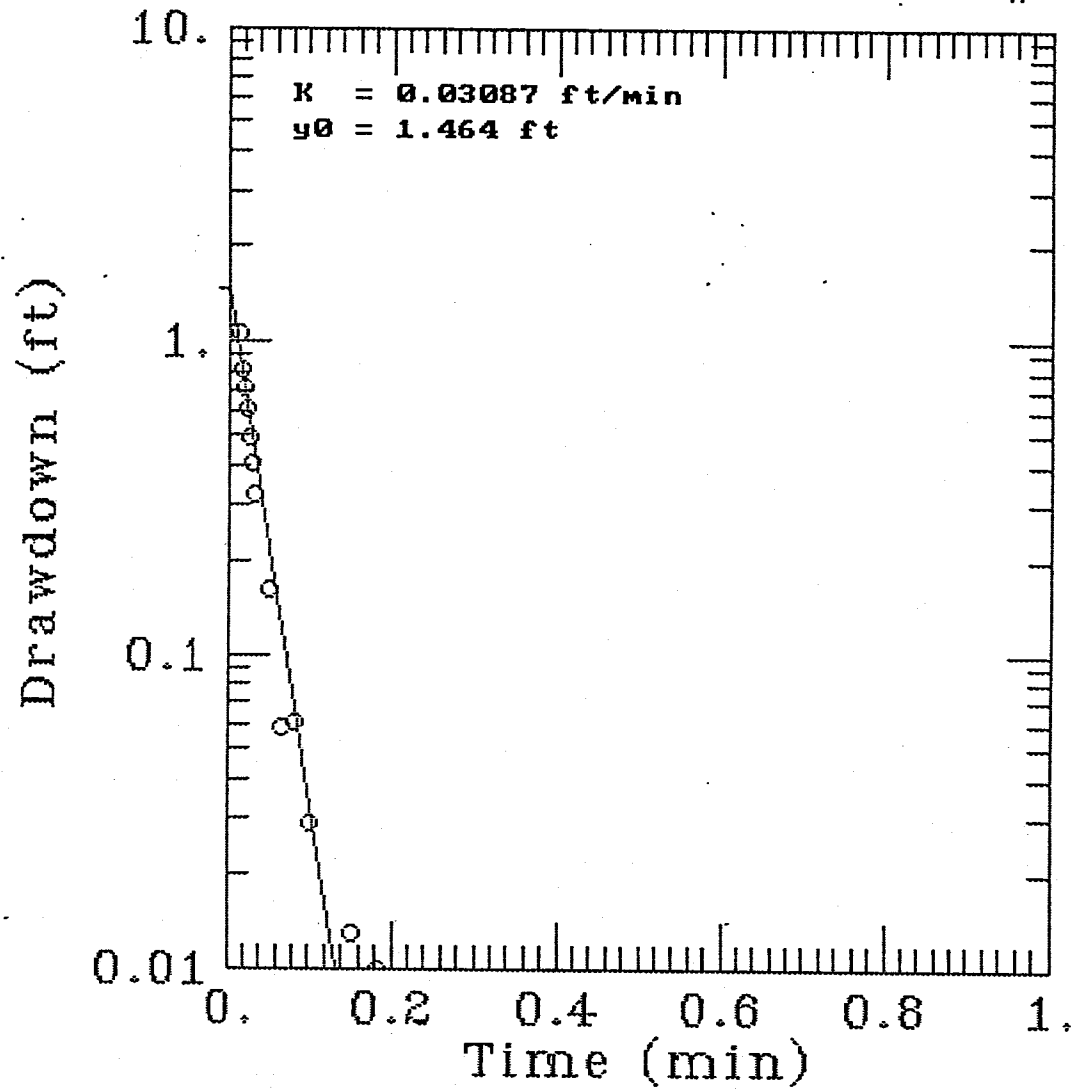
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TYPE CURVE DATA

K = 4.40581E-002
y0 = 1.91602E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	1.916E+000	1.000E+000	7.348E-024		

PEN-3221SW-MW-1 RUN #3



AQTESOLV



GERAGHTY
& MILLER, INC.



Modeling Group

=====

A Q T E S O L V R E S U L T S
Version 1.10

08/05/92

14:55:25

=====

TEST DESCRIPTION

Data set..... A:3221SW13.SET
Data set title..... PEN-3221SW-MW-1 RUN #3

Knowns and Constants:

No. of data points..... 13
Radius of well casing..... 0.083
Radius of well..... 0.334
Aquifer saturated thickness..... 7.35
Well screen length..... 10
Static height of water in well..... 7.35
Log(Re/Rw)..... 2.372
A, B, C..... 0.000, 0.000, 1.967

=====

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

=====

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

Estimate
K = 2.3552E-002
y0 = 1.1722E+000

=====

TYPE CURVE DATA

K = 3.08743E-002
y0 = 1.46428E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
-----	-----	-----	-----	-----	-----
0.000E+000	1.464E+000	1.000E+000	5.707E-017		

APPENDIX E
LABORATORY ANALYTICAL DATA

SOIL SAMPLE ANALYSES
January through December 1992



Since 1938

WADSWORTH/ALERT
LABORATORIES

5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

February 12, 1992

Mr. Roger Durham
ABB Environmental Services, Inc.
2571 Executive Center Circle East
Suite 100
Tallahassee, FL 32301

Dear Mr. Durham:

Over the course of the past month, it was noted that toluene has begun randomly appearing in samples, trip blanks and equipment blanks at levels ranging from about 2 ug/L to about 22 ug/L. We have investigated its presence and feel that we have located the source of this random contamination problem.

WAL began using custom printed sample container labels this past fall. At that time we evaluated the labels for any trace contaminants and found none. In late December we received a second shipment of identical labels and began using them for sampling kits sent out after 20 December 1991. The investigation of the toluene contamination led us to evaluate this second shipment of labels as well. Upon evaluation, it was found that these labels are contaminated with Toluene as well as 2-Butanone (MEK). Given that these are volatile compounds it can be demonstrated that, under certain conditions, these compounds might migrate across the septum of the sample vial.

We have discontinued use of these labels and are attempting to reissue new labels and bottles for any sample kits which are still pending. In addition we are working with the printer to determine why these labels were not made to our previously determined specifications. We have also established a policy of testing all label batches before they may be used in any kits.

The impact which these findings have on any recent or current analytical data must be determined on an individual basis. If you have any questions regarding this matter or would like to further investigate particular results, please contact your project manager or myself at (813) 621-0784. Thank you for your patience and help in this matter.

Sincerely,

Wadsworth/ALERT Laboratories

N. Myron Gunsalus, Jr.
Quality Control Coordinator



HEADQUARTERS AND
LABORATORY
P.O. Box 2912
4101 Shuffel Drive, N.W.
North Canton, OH 44720
(216) 497-9396

REGIONAL
LABORATORY
P.O. Box 31454
5405 Schaaf Rd.
Cleveland, OH 44131
(216) 642-9151

REGIONAL
OFFICE
1445 Pisgah Church Rd.
Lexington, SC 29072
(803) 957-8590

REGIONAL
LABORATORY
5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610
(813) 621-0784



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A0901-1
MATRIX : SOIL

DATE RECEIVED: 1/ 9/92

SAMPLE ID : PEN-3221SW-SB1 (5-7) T.O. #0014

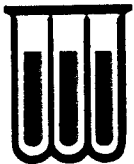
CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/13- 1/17/92	ND	0.5 mg/kg
Cadmium	1/13- 1/14/92	ND	0.5 mg/kg
Chromium	1/13- 1/14/92	ND	2.5 mg/kg
Lead	1/13- 1/14/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A0901-2
MATRIX : SOIL

DATE RECEIVED: 1/ 9/92

SAMPLE ID : PEN-3221SW-SB2-5 T.O. #0014

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/13- 1/17/92	ND	0.5 mg/kg
Cadmium	1/13- 1/14/92	ND	0.5 mg/kg
Chromium	1/13- 1/14/92	ND	2.5 mg/kg
Lead	1/13- 1/14/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A0901-3
MATRIX : SOIL

DATE RECEIVED: 1/ 9/92

SAMPLE ID : PEN-3221SW-SB3-5 T.O. #0014

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/13- 1/17/92	ND	0.5 mg/kg
Cadmium	1/13- 1/14/92	ND	0.5 mg/kg
Chromium	1/13- 1/14/92	ND	2.5 mg/kg
Lead	1/13- 1/14/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A0901-4
MATRIX : SOIL

DATE RECEIVED: 1/ 9/92

SAMPLE ID : PEN-3221SW-SB4 (5-7) T.O. #0014

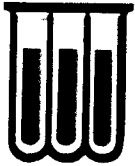
CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/13- 1/17/92	ND	0.5 mg/kg
Cadmium	1/13- 1/14/92	ND	0.5 mg/kg
Chromium	1/13- 1/14/92	ND	2.5 mg/kg
Lead	1/13- 1/14/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1102-6
MATRIX : SOIL

DATE RECEIVED: 4/11/92

SAMPLE ID : 3221SW-MW3 (6') NADEP PENSACOLA

METALS ANALYTICAL REPORT
SELECTED LIST

CERTIFICATION #: E84059
HRS84297

Total metals analysis results - dry weight basis

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/23/92	ND	0.5 mg/kg
Cadmium	4/23- 4/24/92	ND	0.5 mg/kg
Chromium	4/23- 4/24/92	ND	2.5 mg/kg
Lead	4/23- 4/24/92	13	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1102-7
MATRIX : SOIL

DATE RECEIVED: 4/11/92

SAMPLE ID : 3221SW-MW4 (5') NADEP PENSACOLA

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - dry weight basis

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/23/92	ND	0.5 mg/kg
Cadmium	4/23- 4/24/92	ND	0.5 mg/kg
Chromium	4/23- 4/24/92	ND	2.5 mg/kg
Lead	4/23- 4/24/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1102-8
MATRIX : SOIL

DATE RECEIVED: 4/11/92

SAMPLE ID : 3221SW-MW5 (5-7') NADEP PENSACOLA

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - dry weight basis

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/23/92	ND	0.5 mg/kg
Cadmium	4/23- 4/24/92	ND	0.5 mg/kg
Chromium	4/23- 4/24/92	ND	2.5 mg/kg
Lead	4/23- 4/24/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ ~~WERT~~ Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 8/29/92

LAB #: 2H2914-1

MATRIX : SOIL

SAMPLE ID : SB9 (5')

PROJ #3221 SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT

HRS84297

SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 95

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 8- 9/ 9/92	ND	0.5	mg/kg
Cadmium	9/ 8/92	ND	0.5	mg/kg
Chromium	9/ 8/92	ND	2.5	mg/kg
Lead	9/ 8/92	ND	2.5	mg/kg

NOTE: ND (None Detected)



WADSWORTH/ CERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 8/29/92

LAB #: 2H2914-2

MATRIX : SOIL

SAMPLE ID : SB10 (5')

PROJ #3221 SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT

HRS84297

SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 94

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 8- 9/ 9/92	ND	0.5	mg/kg
Cadmium	9/ 8/92	ND	0.5	mg/kg
Chromium	9/ 8/92	ND	2.5	mg/kg
Lead	9/ 8/92	ND	2.5	mg/kg

NOTE: ND (None Detected)



WADSWORTH/LEATT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 8/29/92

LAB #: 2H2914-3

MATRIX : SOIL

SAMPLE ID : SB11 (5')

PROJ #3221 SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT

HRS84297

SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 8- 9/ 9/92	ND	0.5	mg/kg
Cadmium	9/ 8/92	ND	0.5	mg/kg
Chromium	9/ 8/92	ND	2.5	mg/kg
Lead	9/ 8/92	ND	2.5	mg/kg

NOTE: ND (None Detected)



WADSWORTH/ LEST Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 8/29/92

LAB #: 2H2914-4

MATRIX : SOIL

SAMPLE ID : SB12 (5')

PROJ #3221 SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT

HRS84297

SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 95

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 8- 9/ 9/92	ND	0.5	mg/kg
Cadmium	9/ 8/92	ND	0.5	mg/kg
Chromium	9/ 8/92	ND	2.5	mg/kg
Lead	9/ 8/92	ND	2.5	mg/kg

NOTE: ND (None Detected)



WADSWORTH/ WERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2H2914-5
MATRIX : SOIL

DATE RECEIVED: 8/29/92

SAMPLE ID : SB13 (5')

PROJ #3221 SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 94

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 8- 9/ 9/92	ND	0.5	mg/kg
Cadmium	9/ 8/92	ND	0.5	mg/kg
Chromium	9/ 8/92	ND	2.5	mg/kg
Lead	9/ 8/92	ND	2.5	mg/kg

NOTE: ND (None Detected)



WADSWORTH/ WERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 8/29/92

LAB #: 2H2914-6

MATRIX : WATER

SAMPLE ID : EQUIP BLANK

PROJ #3221 SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT

HRS84297

SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 4- 9/ 8/92	ND	10	ug/L
Cadmium	9/ 4/92	ND	10	ug/L
Chromium	9/ 4/92	ND	50	ug/L
Lead	9/ 4/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2L3105-3
MATRIX : SOIL

DATE RECEIVED: 12/31/92

SAMPLE ID : 3221SW-SB14 (6.5')

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	1/ 5- 1/ 6/93	11	5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2L3105-BK
MATRIX : SOIL

DATE RECEIVED: 12/31/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	1/ 5- 1/ 6/93	ND	5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

LAB ID : LCS

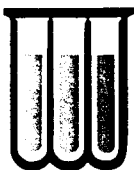
MATRIX : SOIL

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	01/04/93	01/04/93	76	30 50-140	LCS

GROUNDWATER SAMPLE ANALYSES

January 25, 1992



Since 1938

**WADSWORTH/ALERT
LABORATORIES**

5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

ANALYTICAL REPORT

SUBCONTRACT NUMBER: 1-08-134

TASK ORDER NUMBER: 0015

NAS/NADEP PENSACOLA - PHASE II

Presented to:

ROGER DURHAM

ABB ENVIRONMENTAL SERVICES, INC.

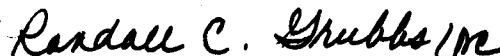
WADSWORTH/ALERT LABORATORIES

5910 BRECKENRIDGE PARKWAY, SUITE H

TAMPA, FL 33610

(813) 621-0784


Dan Henson
Project Manager



Randall C. Grubbs
Laboratory Director - Florida

February 12, 1992



**HEADQUARTERS AND
LABORATORY**
P.O. Box 2912
4101 Shuffel Drive, N.W.
North Canton, OH 44720
(216) 497-9396

**REGIONAL
LABORATORY**
P.O. Box 31454
5405 Schaaf Rd.
Cleveland, OH 44131
(216) 642-9151

**REGIONAL
OFFICE**
1445 Pisgah Church Rd.
Lexington, SC 29072
(803) 957-8590

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5910 Breckenridge Pkwy
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Since 1938

**WADSWORTH/ALERT
LABORATORIES**

5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

February 12, 1992

Mr. Roger Durham
ABB Environmental Services, Inc.
2571 Executive Center Circle East
Suite 100
Tallahassee, FL 32301

Dear Mr. Durham:

Over the course of the past month, it was noted that toluene has begun randomly appearing in samples, trip blanks and equipment blanks at levels ranging from about 2 ug/L to about 22 ug/L. We have investigated its presence and feel that we have located the source of this random contamination problem.

WAL began using custom printed sample container labels this past fall. At that time we evaluated the labels for any trace contaminants and found none. In late December we received a second shipment of identical labels and began using them for sampling kits sent out after 20 December 1991. The investigation of the toluene contamination led us to evaluate this second shipment of labels as well. Upon evaluation, it was found that these labels are contaminated with Toluene as well as 2-Butanone (MEK). Given that these are volatile compounds it can be demonstrated that, under certain conditions, these compounds might migrate across the septum of the sample vial.

We have discontinued use of these labels and are attempting to reissue new labels and bottles for any sample kits which are still pending. In addition we are working with the printer to determine why these labels were not made to our previously determined specifications. We have also established a policy of testing all label batches before they may be used in any kits.

The impact which these findings have on any recent or current analytical data must be determined on an individual basis. If you have any questions regarding this matter or would like to further investigate particular results, please contact your project manager or myself at (813) 621-0784. Thank you for your patience and help in this matter.

Sincerely,

Wadsworth/ALERT Laboratories

N. Myron Gunsalus, Jr.
Quality Control Coordinator



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Suite H
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(813) 621-0784



WADSWORTH/ALERT
LABORATORIES

INVOLVEMENT

This report summarizes the analytical results of the NAS/NADEP Pensacola - Phase II site submitted by ABB Environmental Services, Inc. to Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Roger Durham. The samples were accepted into Wadsworth's Florida facility on 28 January 1992, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.

Laboratory ID

2A2813-1,2,3,5,6,7

Narrative

The laboratory blank concurrently analyzed with these samples for volatile organic compounds contained methylene chloride. This compound is a common laboratory contaminant and its presence in the samples should be considered suspect.



WADSWORTH/ALERT
LABORATORIES

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER	METHOD

ORGANICS	
Volatile Organics	** EPA Method 624
Base/Neutral Acid Extractables	** EPA Method 625
METALS	
Arsenic	** EPA Method 206.2
Cadmium	** EPA Method 200.7
Chromium	** EPA Method 200.7
Lead	** EPA Method 239.2
MISCELLANEOUS	
Tot. Rec. Petroleum Hydrocarbons	** EPA Method 418.1

NOTE: ** Indicates usage of this method to obtain results for this report.

EPA Methods -Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982
Drinking Waters USEPA, 600/4-88/039, December, 1988.

Std. Methods -Standard Methods for the Examination of Water and Wastewater, APHA, 16th edition, 1985.

USEPA Methods -From 40CFR Part 136, published in Federal Register on October 26, 1984.

SW846 Methods -Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

ASTM Methods -American Society for Testing and Materials.

NIOSH Method -NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	12 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	106	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	119	(22-135)	(10-155)
Fluorobiphenyl	38	(34-140)	(12-153)
Terphenyl-d14	56	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND*
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	42	(17-95)	(24-118)
Phenol-d5	71	(11-89)	(17-124)
2,4,6-Tribromophenol	82	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : MW 1 NADEP PENSACOLA/ 3221 SW

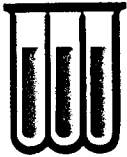
CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	1 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-1
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-2
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	13 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	109	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-2
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo(k)fluoranthene	ND	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(g,h,i)perylene	ND	Diethyl phthalate	ND
Benzo(a)pyrene	ND	Dimethyl phthalate	ND
Bis(2-Chloroethoxy)methane	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroisopropyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluoranthene	ND
4-Bromophenyl phenyl ether	ND	Fluorene	ND
Butyl benzyl phthalate	ND	Hexachlorobenzene	ND
2-Chloronaphthalene	ND	Hexachlorobutadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachlorocyclopentadiene	ND
Chrysene	ND	Hexachloroethane	ND
		Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-2
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	90	(22-135)	(10-155)
Fluorobiphenyl	36	(34-140)	(12-153)
Terphenyl-d14	62	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-2
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND*
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	34	(17-95)	(24-118)
Phenol-d5	53	(11-89)	(17-124)
2,4,6-Tribromophenol	78	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-2
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/ 4/92	ND	10	ug/L
Cadmium	2/ 4/92	ND	10	ug/L
Chromium	2/ 4/92	ND	50	ug/L
Lead	2/ 4- 2/ 5/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-2
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	15 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	15
2-Chloroethylvinyl ether	ND	Toluene	16
Chloroform	3	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	1	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	114	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Ben-zidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	91	(22-135)	(10-155)
Fluorobiphenyl	19	(34-140)	(12-153)
Terphenyl-d14	58	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND*
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	37	(17-95)	(24-118)
Phenol-d5	74	(11-89)	(17-124)
2,4,6-Tribromophenol	38	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-3
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-4
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	79B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	9
2-Chloroethylvinyl ether	ND	Toluene	16
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	107	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-4
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Ben-zidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-4
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	130	(22-135)	(10-155)
Fluorobiphenyl	36	(34-140)	(12-153)
Terphenyl-d14	56	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-4
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	40	(17-95)	(24-118)
Phenol-d5	34	(11-89)	(17-124)
2,4,6-Tribromophenol	41	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-4
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-4
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	18 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	112	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,3-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	1,4-Dichlorobenzene	ND
		3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	88	(22-135)	(10-155)
Fluorobiphenyl	13	(34-140)	(12-153)
Terphenyl-d14	56	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	47	(17-95)	(24-118)
Phenol-d5	58	(11-89)	(17-124)
2,4,6-Tribromophenol	59	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-5
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	13 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	108	(75-123)	(85-126)	(85-138)
Toluene-d8	103	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

Acetone

13 ug/L

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(k)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(ghi)perylene	ND	Diethyl phthalate	ND
Benzo(a)pyrene	ND	Dimethyl phthalate	ND
Bis(2-Chloroethoxy)methane	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroisopropyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluoranthene	ND
4-Bromophenyl phenyl ether	ND	Fluorene	ND
Butyl benzyl phthalate	ND	Hexachlorobenzene	ND
2-Chloronaphthalene	ND	Hexachlorobutadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachlorocyclopentadiene	ND
Chrysene	ND	Hexachloroethane	ND
		Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	104	(22-135)	(10-155)
Fluorobiphenyl	19	(34-140)	(12-153)
Terphenyl-d14	61	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	48	(17-95)	(24-118)
Phenol-d5	71	(11-89)	(17-124)
2,4,6-Tribromophenol	89	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-6
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

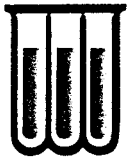
SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-7
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: TRIP BLANK

NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	14 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	3
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	2
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	114	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



WADSWORTH/ALERT
LABORATORIES QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

<u>Volatiles</u>	<u>Semi-volatiles</u>	<u>Metals</u>
Methylene chloride	Dimethyl phthalate	Calcium
Toluene	Diethyl phthalate	Magnesium
2-Butanone	Di-n-butyl phthalate	Sodium
Acetone	Butyl benzyl phthalate	
	Bis (2-ethylhexyl) phthalate	

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



WADSWORTH/ALERT
LABORATORIES QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	QC LIMITS	
					RPD	RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150

(cmpd. name)	sample	1st%	2nd%	Rel.%	accep. method
	result	recov.	recov.	diff.	perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	108	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	101	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: LABORATORY BLANK

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	1
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	103	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 5/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 5/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	41	(22-135)	(10-155)
Fluorobiphenyl	84	(34-140)	(12-153)
Terphenyl-d14	83	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 5/92

SAMPLE ID: LABORATORY BLANK

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	19	(17-95)	(24-118)
Phenol-d5	14	(11-89)	(17-124)
2,4,6-Tribromophenol	15	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/ 4/92	ND	10	ug/L
Cadmium	2/ 4/92	ND	10	ug/L
Chromium	2/ 4/92	ND	50	ug/L
Lead	2/ 4/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/LA
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-BK
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/LAB
LABORATORIES

LAB #: 2A2813-LCS
MATRIX: WATER
METHOD: 624

DATE RECEIVED: 01/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 02/04/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS %RECOVERY
1,1-Dichloroethene	68	56-133
Trichloroethene	96	67-106
Chlorobenzene	96	78-122
Toluene	97	64-128
Benzene	88	83-123
Dichlorobromomethane	87	71-123



WADSWORTH/ALERT
LABORATORIES

LAB #/: 2A2813-LCS
MATRIX: WATER
METHOD: 624

DATE RECEIVED: 01/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 02/05/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS %RECOVERY
1,1-Dichloroethene	101	56-133
Trichloroethene	95	67-106
Chlorobenzene	99	78-122
Toluene	94	64-128
Benzene	88	83-123
Dichlorobromomethane	82	71-123



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-LCS
MATRIX: WATER
METHOD: 625

DATE RECEIVED: 01/28/92
DATE EXTRACTED: 01/31/92
DATE ANALYZED: 02/05/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
1,2,4-Trichlorobenzene	69	20-111
Acenaphthene	96	31-105
2,4-Dinitrotoluene	64	22-107
Pyrene	107	12-108
Nitrosodipropylamine	106	42-125
1,4-Dichlorobenzene	82	31-99



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-LCS
MATRIX: WATER
METHOD: 625

DATE RECEIVED: 01/28/92
DATE EXTRACTED: 01/31/92
DATE ANALYZED: 02/05/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Pentachlorophenol	14	10-100
Phenol	57	12-90
2-Chlorophenol	64	30-100
4-Chloro-o-cresol	15	12-109
4-Nitrophenol	36	10-102



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-LCS
MATRIX: WATER

DATE RECEIVED: 01/28/92
DATE PREP'D: 02/04/92
DATE ANALYZED: 02/04/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Arsenic, furnace	80	54-130
Cadmium	104	78-113
Chromium	106	79-121
Lead, furnace	92	64-131



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-LCS
MATRIX: WATER

DATE RECEIVED: 01/28/92
DATE EXTRACTED: 01/30/92
DATE ANALYZED: 01/30/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Tot. Rec. Petroleum Hydrocarbons	104	75-124



WADSWORTH/ALERT
LABORATORIES

LAB#: 2A2813-1
MATRIX: WATER
METHOD: 624

DATE RECEIVED: 01/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 02/05/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	MS	MSD	RPD	QC LIMITS	
	%REC	%REC		RPD	RECOVERY
1,1-Dichloroethene	76	88	15	19	63-123
Trichloroethene	91	91	0	10	75-115
Chlorobenzene	91	92	1	13	74-113
Toluene	120	127	6	23	75-122
Benzene	83	88	6	16	76-126
Dichlorobromomethane	82	86	5	15	67-114



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-1,2
MATRIX: WATER

DATE RECEIVED: 01/28/92
DATE EXTRACTED: 02/04/92
DATE ANALYZED: 02/04/92 to
02/05/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - METALS

ELEMENT	MS %REC	MSD %REC	RPD	QC LIMITS	
				RPD	RECOVERY
Arsenic, furnace	86	90	4	19	80-119
Cadmium	102	103	1	15	76-110
Chromium	105	105	0	21	74-117
Lead, furnace	101	100	1	24	76-124

**WADSWORTH/ALERT LABORATORIES
SAMPLE SHIPPER EVALUATION AND RECEIPT FORM**

Client: ABB Project Name/Number: NADEP- Pensacola
 Samples Received By: Carol McNulty Date Received: 1/28/92
 (Signature)
 Sample Evaluation Form By: Carol McNulty LAB No: 3744/2A 2813-167
 (Signature)

Type of shipping container samples received in? WAL Cooler X
 Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

- | | YES | NO |
|--|----------|-------------|
| 1. Were custody seals on shipping container(s) intact? | <u>X</u> | <u> </u> |
| 2. Were custody papers properly included with samples? | <u>X</u> | <u> </u> |
| 3. Were custody papers properly filled out (ink, signed, match labels)? | <u>X</u> | <u> </u> |
| 4. Did all bottles arrive in good condition (unbroken)? | <u>X</u> | <u> </u> |
| 5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)? | <u>X</u> | <u> </u> |
| 6. Were correct bottles used for the tests indicated? | <u>X</u> | <u> </u> |
| 7. Were proper sample preservation techniques indicated? | <u>X</u> | <u> </u> |
| 8. Were samples received within adequate holding time? | <u>X</u> | <u> </u> |
| 9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section) | <u>X</u> | <u> </u> |
| 10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW) | <u>X</u> | <u> </u> |
| 11. Were samples accepted into the laboratory? (If no see comments) | <u>X</u> | <u> </u> |

Cooler # Temp 4 °C Cooler # Temp °C
 Cooler # Temp °C Cooler # Temp °C

Comments:

WADSWORTH/ALERT LABORATORIES – FLORIDA

5910-H BRECKENRIDGE PARKWAY/TAMPA, FL 33610
(813) 621-0784 ✓

№ 4808

Chain-of Custody Record

[illegible]

GROUNDWATER SAMPLE ANALYSES

April 15, 1992



WADSWORTH/ALERT
LABORATORIES

5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

Since 1938

ANALYTICAL REPORT

SUBCONTRACT NUMBER: 1-08-134

TASK ORDER NUMBER: 0015, MOD. NO. 0001

NAS/NADEP PENSACOLA

Presented to:

PETER REDFERN

ABB ENVIRONMENTAL SERVICES, INC.

WADSWORTH/ALERT LABORATORIES

5910 BRECKENRIDGE PARKWAY, SUITE H

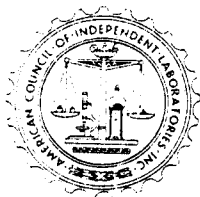
TAMPA, FL 33610

(813) 621-0784

Dan Henson
Project Manager

Randall C. Grubbs
Laboratory Director - Florida

May 4, 1992



HEADQUARTERS AND
LABORATORY
P.O. Box 2912
4101 Shuffel Drive, N.W.
North Canton, OH 44720
(216) 497-9396

REGIONAL
LABORATORY
P.O. Box 31454
5405 Schaaf Rd.
Cleveland, OH 44131
(216) 642-9151

REGIONAL
OFFICE
1445 Pisgah Church Rd.
Lexington, SC 29072
(803) 957-8590

REGIONAL
LABORATORY
5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610
(813) 621-0784



WADSWORTH/ALERT
LABORATORIES

INVOLVEMENT

This report summarizes the analytical results of the NAS/NADEP Pensacola site submitted by ABB Environmental Services, Inc. to Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Peter Redfern. The samples were accepted into Wadsworth's Florida facility on 16 April 1992, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.



WADSWORTH/ALERT
LABORATORIES

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER	METHOD

ORGANICS	
Volatile Organics	** EPA Method 624
Base Neutral/Acid Extractables	** EPA Method 625
METALS	
Arsenic	** EPA Method 206.2
Cadmium	** EPA Method 200.7
Chromium	** EPA Method 200.7
Lead	** EPA Method 239.2
MISCELLANEOUS	
Tot. Rec. Petroleum Hydrocarbons	** EPA Method 418.1

NOTE: ** Indicates usage of this method to obtain results for this report.

EPA Methods -Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982
Drinking Waters USEPA, 600/4-88/039, December, 1988.

Std. Methods -Standard Methods for the Examination of Water and Wastewater, APHA, 16th edition, 1985.

USEPA Methods -From 40CFR Part 136, published in Federal Register on October 26, 1984.

SW846 Methods -Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

ASTM Methods -American Society for Testing and Materials.

NIOSH Method -NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	84	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	90	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS
		WATER SOLID
Nitrobenzene-d5	55	(22-135) (10-155)
Fluorobiphenyl	65	(34-140) (12-153)
Terphenyl-d14	39	(10-132) (13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

Butyl-cyclobutane

16 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	51	(17-95)	(24-118)
Phenol-d5	58	(11-89)	(17-124)
2,4,6-Tribromophenol	50	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/28/92	ND	10 ug/L
Cadmium	4/28/92	ND	10 ug/L
Chromium	4/28/92	ND	50 ug/L
Lead	4/28/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-1
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	92	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	93	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	45	(22-135)	(10-155)
Fluorobiphenyl	41	(34-140)	(12-153)
Terphenyl-d14	22	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	30	(17-95)	(24-118)
Phenol-d5	29	(11-89)	(17-124)
2,4,6-Tribromophenol	24	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/28/92	ND	10 ug/L
Cadmium	4/28/92	ND	10 ug/L
Chromium	4/28/92	ND	50 ug/L
Lead	4/28/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-2
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	8
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	1	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	91	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	95	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	58	(22-135)	(10-155)
Fluorobiphenyl	54	(34-140)	(12-153)
Terphenyl-d14	30	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW3 NADEP PEN

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	47	(17-95)	(24-118)
Phenol-d5	47	(11-89)	(17-124)
2,4,6-Tribromophenol	30	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/28/92	ND	10 ug/L
Cadmium	4/28/92	ND	10 ug/L
Chromium	4/28/92	ND	50 ug/L
Lead	4/28/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-3
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	1
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	92	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	91	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	56	(22-135)	(10-155)
Fluorobiphenyl	53	(34-140)	(12-153)
Terphenyl-d14	27	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
HRS84297

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

Butyl-cyclobutane

11 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	39	(17-95)	(24-118)
Phenol-d5	37	(11-89)	(17-124)
2,4,6-Tribromophenol	29	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	4/28/92	ND	10	ug/L
Cadmium	4/28/92	ND	10	ug/L
Chromium	4/28/92	ND	50	ug/L
Lead	4/28/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-4
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	13 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	6
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	91	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	109	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,3,5-Trimethyl benzene	150 ug/L
1,2-Diethyl benzene	37 ug/L
1-(4-Methyl phenyl) ethanone	19 ug/L
1,3-Diethyl benzene	21 ug/L
1-Methyl-3-(1-methylethyl) benzene	77 ug/L
4-Ethyl-1,2-dimethyl benzene	57 ug/L
2-Ethyl-1,4-dimethyl benzene	29 ug/L
2,3-Dihydro-1-methyl-1H-indene	25 ug/L
1-Ethyl-2,3-dimethyl benzene	28 ug/L
1,2,3,4-Tetramethyl benzene	35 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS
		WATER SOLID
Nitrobenzene-d5	50	(22-135) (10-155)
Fluorobiphenyl	36	(34-140) (12-153)
Terphenyl-d14	24	(10-132) (13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059
HRS84297

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

(1-Methylethyl)-benzene	9 ug/L
1,2-Diethyl-benzene	24 ug/L
1,4-Diethyl-benzene	13 ug/L
1,3-Diethyl benzene	15 ug/L
1-Octanol	15 ug/L
1-Methyl-4-(1-methylethyl)-benzene	66 ug/L
2-Ethyl-1,4-dimethyl-benzene	15 ug/L
1-Ethyl-3,5-dimethyl-benzene	18 ug/L
2,3-Dihydro-4-methyl-1H-indene	13 ug/L
1,2,3,4-Tetrahydro-naphthalene	8 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	38	(17-95)	(24-118)
Phenol-d5	38	(11-89)	(17-124)
2,4,6-Tribromophenol	31	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 4/16/92

LAB #: 2D1601-5

MATRIX : WATER

SAMPLE ID : 3221SW-MW5

NADEP PEN

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/28/92	ND	10 ug/L
Cadmium	4/28/92	ND	10 ug/L
Chromium	4/28/92	ND	50 ug/L
Lead	4/28/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-5
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	92	(75-123)	(85-126)	(85-138)
Toluene-d8	98	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	92	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(k)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(ghi)perylene	ND	Diethyl phthalate	ND
Benzo(a)pyrene	ND	Dimethyl phthalate	ND
Bis(2-Chloroethoxy)methane	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroisopropyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	58	(22-135)	(10-155)
Fluorobiphenyl	109	(34-140)	(12-153)
Terphenyl-d14	31	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

Butyl-cyclobutane

19 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	42	(17-95)	(24-118)
Phenol-d5	43	(11-89)	(17-124)
2,4,6-Tribromophenol	38	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 4/16/92

LAB #: 2D1601-6

MATRIX : WATER

SAMPLE ID : 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/28/92	ND	10 ug/L
Cadmium	4/28/92	ND	10 ug/L
Chromium	4/28/92	ND	50 ug/L
Lead	4/28/92	6	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-6
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-12
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/18/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	93	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-12
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-12
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS
		WATER SOLID
Nitrobenzene-d5	56	(22-135) (10-155)
Fluorobiphenyl	54	(34-140) (12-153)
Terphenyl-d14	60	(10-132) (13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-12
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	39	(17-95)	(24-118)
Phenol-d5	37	(11-89)	(17-124)
2,4,6-Tribromophenol	35	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 4/16/92

LAB #: 2D1601-12

MATRIX : WATER

SAMPLE ID : 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/28/92	ND	10 ug/L
Cadmium	4/28/92	ND	10 ug/L
Chromium	4/28/92	ND	50 ug/L
Lead	4/28- 4/29/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-12
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



WADSWORTH/ALERT
LABORATORIES

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



WADSWORTH/ALERT
LABORATORIES

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS	MSD	RPD	QC LIMITS	
		%REC	%REC		RPD	RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.	accep. method perform range	

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/17/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	81	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	91	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: LABORATORY BLANK

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	1
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzydine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	59	(22-135)	(10-155)
Fluorobiphenyl	63	(34-140)	(12-153)
Terphenyl-d14	69	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: LABORATORY BLANK

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	47	(17-95)	(24-118)
Phenol-d5	45	(11-89)	(17-124)
2,4,6-Tribromophenol	54	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : LABORATORY BLANK

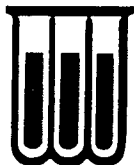
CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	4/28/92	ND	10	ug/L
Cadmium	4/28/92	ND	10	ug/L
Chromium	4/28/92	ND	50	ug/L
Lead	4/28/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-BK
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

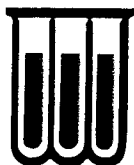
SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W2522

DATE EXTRACTED: N/A
DATE ANALYZED : 04/17/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W2522	105	40 56-133
Trichloroethene		89	20 67-106
Chlorobenzene		89	21 78-122
Toluene		96	30 64-128
Benzene		94	21 83-123
Dichlorobromomethane		88	25 71-123



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W2545

DATE EXTRACTED: N/A
DATE ANALYZED : 04/20/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W2545	100	40 56-133
Trichloroethene		88	20 67-106
Chlorobenzene		84	21 78-122
Toluene		98	30 64-128
Benzene		94	21 83-123
Dichlorobromomethane		90	25 71-123



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS
MATRIX : WATER
METHOD : 625
RUN ID : S9333

DATE EXTRACTED: 04/16/92
DATE ANALYZED : 04/24/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,4-Dichlorobenzene	S9333	46	30 31-99
N-Nitrosodi-n-propylamine		48	41 42-125
1,2,4 Trichlorobenzene		59	43 20-111
Acenaphthene		60	36 31-105
2,4-Dinitrotoluene		37	40 22-107
Pyrene		62	32 12-108



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS
MATRIX : WATER
METHOD : 625
RUN ID : S9333

DATE EXTRACTED: 04/16/92
DATE ANALYZED : 04/24/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS	
			RPD	%REC
Phenol	S9333	27	37	12-90
2-Chlorophenol		41	33	30-100
4-Chloro-3-methylphenol		44	32	12-109
4-Nitrophenol		26	42	10-102
Pentachlorophenol		58	42	10-100



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
Arsenic (furnace)	04/28/92	04/28/92	88	38 53-131	LCS
Cadmium	04/28/92	04/28/92	97	18 77-113	
Chromium	04/28/92	04/28/92	112	21 79-121	
Lead (furnace)	04/28/92	04/28/92	99	33 64-132	



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	04/30/92	05/01/92	100	24 75-124	LCS



WADSWORTH/ALERT
LABORATORIES

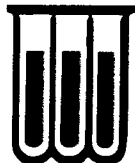
LAB ID : 2D1601-1
MATRIX : WATER
METHOD : 624
RUN ID : W2559/W2560

DATE RECEIVED : 04/16/92
DATE PREPARED : N/A
DATE ANALYZED : 04/21/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC
1,1-Dichloroethene	W2559/W2560	102	102	0	19 63-123
Trichloroethene		88	90	2	10 75-115
Chlorobenzene		88	86	2	13 74-113
Toluene		99	99	0	23 75-122
Benzene		96	96	0	16 76-126
Dichlorobromomethane		86	88	2	15 67-114

* - Diluted Out



WADSWORTH/ALERT
LABORATORIES

LAB ID : 2D1601-6
MATRIX : WATER
METHOD : 625
RUN ID : S9340/S9341

DATE RECEIVED : 04/16/92
DATE PREPARED : 04/16/92
DATE ANALYZED : 04/24/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC
1,4-Dichlorobenzene	S9340/S9341	47	46	2	20 16-56
N-Nitrosodi-n-propylamine		57	57	0	29 40-127
1,2,4 Trichlorobenzene		65	61	6	15 27-65
Acenaphthene		60	58	3	24 57-104
2,4-Dinitrotoluene		67	65	3	22 22-81
Pyrene		81	83	2	30 58-148

* - Diluted Out



WADSWORTH/ALERT
LABORATORIES

LAB ID : 2D1601-6
MATRIX : WATER
METHOD : 625
RUN ID : S9340/S9341

DATE RECEIVED : 04/16/92
DATE PREPARED : 04/16/92
DATE ANALYZED : 04/24/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC
Phenol	S9340/S9341	30	37	21	23 15-97
2-Chlorophenol		37	38	3	21 17-89
4-Chloro-3-methylphenol		48	52	8	36 08-101
4-Nitrophenol		54	58	7	34 13-99
4-Nitrophenol		54	58	7	34 13-99
Pentachlorophenol		33	44	29	42 13-96

* - Diluted Out



WADSWORTH/ALERT
LABORATORIES
Sampling, testing, mobile labs

5910 Breckenridge Pkwy.
Suite H
Tampa, FL 33610

Chain of Custody Record

(813) 621-0784
Fax (813) 623-6021

Record _____ of _____

05634

Client:		Project Name / Location NADER PEN			No. Of CONTAINERS	Parameter										Remarks				
Sampler(s) Roger Lohr		Project #:				VOC -	PAH -	METALS -	TRPH -	EDB -										
Item #	Date	Time	MATRIX	Sample Location																
✓ 1	4/15/92	1015	WATER	3221SW-EQUIP BLANK	6	2	2	1	1											
✓ 1	4/15/92	1035	WATER	3450W-MW2	6	2	2	1	1											
✓ 3	4/15/92	1135	WATER	3221SW-MW3	6	2	2	1	1											
✓ 2	4/15/92	1147	WATER	3221SW-MW2	6	2	2	1	1											
✓ 1	4/15/92	1200	WATER	3221SW-MW1	6	2	2	1	1											
✓ 6	4/15/92	1210	WATER	3221SW-DUPLICATE	6	2	2	1	1											
✓ 5	4/15/92	1220	WATER	3221SW-MW5	6	2	2	1	1											
✓ 4	4/15/92	1230	WATER	3221SW-MW4	6	2	2	1	1											
✓ 9	4/15/92	1517	WATER	3221NE-MW10	6	2	2	1	1											both bottles for BNA not broken
✓ 7	4/15/92	1505	WATER	3221NE-MW6	2	2														
✓ 12	4/8/92	1025	WATER	TRIP BLANK	2	2														

Total Containers

58

Number of Coolers in Shipment

3

Bailers

Report To:

Transfer Number

Item Number(s)

Relinquished By / Company

Accepted By / Company

Date

Time

Additional Comments:

1

2

3

4

5

6

Roger Lohr 1715
4/15/92

Wadsworth/Alert
Carol McNulty

4/16/92

10:15

Original Accompanies Shipment



WADSWORTH/ALERT
LABORATORIES
Sampling, testing, mobile labs

5910 Breckenridge Pkwy.
Suite H
Tampa, FL 33610

(813) 621-0784
Fax (813) 623-6021

Chain of Custody Record

Record _____ of _____

05633

Client:		Project Name / Location NADEP PEN			No. Of CON-TAINERS	Parameter										Remarks			
Sampler(s) <i>Ryan Loh</i>		Project #:																	
Item #	Date	Time	MATRIX	Sample Location		VOC	PAH	METALS	TRPH	EDB									
1	4/15/92	1510	WATER	3221 NE - MW 9	2	2													
2	4/15/92	1508	WATER	3221 NE - MW 11	2	2													
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			

Total Containers

24

Number of Coolers in Shipment

3

Bailers

0

Report To:	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
Additional Comments:	1		<i>Ryan Loh</i> 4/15/92 1715	<i>Wadsworth/Alert</i> <i>Carol Mc Nulty</i>	4/16/92	10:15
	2					
	3					
	4					
	5					
	6					

Original Accompanies Shipment

**WADSWORTH/ALERT LABORATORIES
SAMPLE SHIPPER EVALUATION AND RECEIPT FORM**

Client: ABB Project Name/Number: NADEP Plan
 Samples Received By: Carol McNulty Date Received: 4/16/92
 (Signature)
 Sample Evaluation Form By: Carol McNulty LAB No: 42651201601-1613
 (Signature)

Type of shipping container samples received in? WAL Cooler X

Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

- | | YES | NO |
|--|-------------|-------------|
| 1. Were custody seals on shipping container(s) intact? | <u>X</u> | <u> </u> |
| 2. Were custody papers properly included with samples? | <u>X</u> | <u> </u> |
| 3. Were custody papers properly filled out (ink, signed, match labels)? | <u>X</u> | <u> </u> |
| 4. Did all bottles arrive in good condition (unbroken)? | <u> </u> | <u>X</u> |
| 5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)? | <u>X</u> | <u> </u> |
| 6. Were correct bottles used for the tests indicated? | <u>X</u> | <u> </u> |
| 7. Were proper sample preservation techniques indicated? | <u>X</u> | <u> </u> |
| 8. Were samples received within adequate holding time? | <u>X</u> | <u> </u> |
| 9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section) | <u>X</u> | <u> </u> |
| 10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW) | <u>X</u> | <u> </u> |
| 11. Were samples accepted into the laboratory? (If no see comments) | <u>X</u> | <u> </u> |

Cooler # 110 Temp 6 °C Cooler # 187 Temp 5 °C
 Cooler # 47 Temp 6 °C Cooler # Temp °C

Comments: (3221-MW10- BNA bottle broken when rec'd) both attop listed!
Coc not filled out as to what parameters (VOC, PAH, Metals, TRPH)
Bottle labels have these parameters - 624, BNA, TRPH, AsCd, CR, Pb

GROUNDWATER SAMPLE ANALYSES

August 29, 1992



WADSWORTH/ALERT Laboratories
Division of Ensco Incorporated

5910 Breckenridge Parkway, Suite H
Tampa, FL 33610

813-621-0784
FAX 813-623-6021

ANALYTICAL REPORT

SUBCONTRACT NUMBER: 1-08-134

TASK ORDER NUMBER: 0015

NADEP PENSACOLA

Presented to:

PETER REDFERN

ABB ENVIRONMENTAL SERVICES, INC.

WADSWORTH/ALERT LABORATORIES

5910 BRECKENRIDGE PARKWAY, SUITE H

TAMPA, FL 33610

(813) 621-08784


Dan Henson
Project Manager


Randall C. Grubbs
Laboratory Director - Florida

September 24, 1992



WADSWORTH/ALERT Laboratories

INVOLVEMENT

This report summarizes the analytical results of the NADEP Pensacola site submitted by ABB Environmental Services, Inc. to Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Peter Redfern. The samples were accepted into Wadsworth's Florida facility on 01 September 1992, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.

Laboratory ID #
2I0108-2,9,10,11,12

Narrative

The concurrently analyzed laboratory blanks associated with the volatile organic analysis of these samples contained methylene chloride at greater than five times the reported detection limit. Methylene chloride is a common laboratory contaminant and its presence in the samples should be considered suspect.



WADSWORTH/ALERT Laboratories

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER

METHOD

Volatile Organics

** EPA Method 624

Base/Neutral Acid Extractables

** EPA Method 625

METALS

Arsenic

** EPA Method 206.2

Cadmium

** EPA Method 200.7

Chromium

** EPA Method 200.7

Lead

** EPA Method 239.2

MISCELLANEOUS

Tot. Rec. Petroleum Hydrocarbons

** EPA Method 418.1

NOTE:

** Indicates usage of this method to obtain results for this report.

(D)

EPA Methods

Indicates draft version of this method was used
Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982

Std. Methods

Drinking Waters USEPA, 600/4-88/039, December, 1988.
Standard Methods for the Examination of Water and Waste-water, APHA, 16th edition, 1985.

USEPA Methods

From 40CFR Part 136, published in Federal Register on October 26, 1984.

SW846 Methods

Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

ASTM Methods

American Society for Testing and Materials.

NIOSH Method

NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-1

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	5 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	95	(75-123)	(85-126)	(85-138)
Toluene-d8	97	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-1

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benididine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-1
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-1

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	63	(22-135)	(10-155)
Fluorobiphenyl	65	(34-140)	(12-153)
Terphenyl-d14	88	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-1

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	71	(17-95)	(24-118)
Phenol-d5	61	(11-89)	(17-124)
2,4,6-Tribromophenol	62	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-1

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-1

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-2
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: MW-2

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	98	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-2
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-2

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo (a) anthracene	ND*	1,3-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	1,4-Dichlorobenzene	ND
Benzo (k) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (ghi) perylene	ND	Diethyl phthalate	ND
Benzo (a) pyrene	ND	Dimethyl phthalate	ND
Bis (2-Chloroethoxy) methane	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroisopropyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluoranthene	ND
4-Bromophenyl phenyl ether	ND	Fluorene	ND
Butyl benzyl phthalate	ND	Hexachlorobenzene	ND
2-Chloronaphthalene	ND	Hexachlorobutadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachlorocyclopentadiene	ND
Chrysene	ND	Hexachloroethane	ND
		Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-2
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-2

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	63	(22-135)	(10-155)
Fluorobiphenyl	67	(34-140)	(12-153)
Terphenyl-d14	82	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0108-2

MATRIX: WATER

DATE RECEIVED: 9/ 1/92

DATE EXTRACTED: 9/ 2/92

DATE ANALYZED: 9/23/92

SAMPLE ID: MW-2

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	79	(17-95)	(24-118)
Phenol-d5	69	(11-89)	(17-124)
2,4,6-Tribromophenol	59	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 9/ 1/92

LAB #: 2I0108-2

MATRIX : WATER

SAMPLE ID : MW-2

NADEP PEN 3221SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-2
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-2

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-3
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	7 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	94	(75-123)	(85-126)	(85-138)
Toluene-d8	96	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	101	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0108-3

MATRIX: WATER

DATE RECEIVED: 9/ 1/92

DATE EXTRACTED: 9/ 2/92

DATE ANALYZED: 9/23/92

SAMPLE ID: MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzydine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0108-3

MATRIX: WATER

DATE RECEIVED: 9/ 1/92

DATE EXTRACTED: 9/ 2/92

DATE ANALYZED: 9/23/92

SAMPLE ID: MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	65	(22-135)	(10-155)
Fluorobiphenyl	70	(34-140)	(12-153)
Terphenyl-d14	83	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-3
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-3

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	55	(17-95)	(24-118)
Phenol-d5	44	(11-89)	(17-124)
2,4,6-Tribromophenol	45	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-3
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-3
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	7 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	94	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

CERTIFICATION #: E84059
HRS84297

Acenaphthene	ND	Dibenzo (a,h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzydine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

CERTIFICATION #: E84059
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	66	(22-135)	(10-155)
Fluorobiphenyl	74	(34-140)	(12-153)
Terphenyl-d14	94	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	69	(17-95)	(24-118)
Phenol-d5	63	(11-89)	(17-124)
2,4,6-Tribromophenol	46	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1-Unknown

11 ug/L



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-4

NADEP PEN 3221SW

METALS ANALYTICAL REPORT
SELECTED LIST

CERTIFICATION #: E84059
HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-4

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	7 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	95	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	101	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1-Ethyl-2-methyl benzene	11 ug/L
1,3,5-Trimethyl benzene	100 ug/L
1,2-Diethyl benzene	20 ug/L
Substituted benzene	14 ug/L
1,3-Diethyl benzene	11 ug/L
2-Ethyl-1,3-dimethyl benzene	42 ug/L
4-Ethyl-1,2-dimethyl benzene	24 ug/L
2,3-Dihydro-1-methyl-1H-indene	26 ug/L
1,2,3,5-Tetra methyl benzene	21 ug/L
1,2,3,4-Tetra methyl benzene	15 ug/L



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

CERTIFICATION #: E84059
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	57	(22-135)	(10-155)
Fluorobiphenyl	64	(34-140)	(12-153)
Terphenyl-d14	60	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	73	(17-95)	(24-118)
Phenol-d5	66	(11-89)	(17-124)
2,4,6-Tribromophenol	63	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-5
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-5

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-5

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)

**WADSWORTH/ALERT Laboratories**

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	99	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	102	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,3,5-Trimethyl benzene	13 ug/L
2-Ethyl-1,4-dimethyl benzene	7 ug/L
1-Methyl-2-(1-methylethyl) benzene	6 ug/L
1-Methyl-4-(1-methylethyl) benzene	6 ug/L



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

CERTIFICATION #: E84059
HRS84297

Acenaphthene	ND	Dibenzo (a,h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND

N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND

Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	71	(22-135)	(10-155)
Fluorobiphenyl	83	(34-140)	(12-153)
Terphenyl-d14	83	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	82	(17-95)	(24-118)
Phenol-d5	77	(11-89)	(17-124)
2,4,6-Tribromophenol	89	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-6

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-6

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-7

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	4
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-7

NADEP PEN 3221SW

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

CERTIFICATION #: E84059
HRS84297

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate /	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-7

NADEP PEN 3221SW

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

CERTIFICATION #: E84059
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	60	(22-135)	(10-155)
Fluorobiphenyl	71	(34-140)	(12-153)
Terphenyl-d14	79	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-7

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	64	(17-95)	(24-118)
Phenol-d5	57	(11-89)	(17-124)
2,4,6-Tribromophenol	75	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 9/ 1/92

LAB #: 2I0108-7

MATRIX : WATER

SAMPLE ID : MW-7

NADEP PEN 3221SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-7

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-8
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	3
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	102	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0108-8

MATRIX: WATER

DATE RECEIVED: 9/ 1/92

DATE EXTRACTED: NA

DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059

VOLATILE ORGANICS

HRS84297

OTHER COMPOUNDS

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,3,5-Trimethyl benzene	34 ug/L
1,2-Diethyl benzene	8 ug/L
1-Methyl-3-(1-methylethyl) benzene	10 ug/L
4-Ethyl-1,2-dimethyl benzene	9 ug/L
2,3-Dihydro-1-methyl-1H-indene	12 ug/L
1,2,3,5-Tetra methyl benzene	6 ug/L
1,2,3,4-Tetra methyl benzene	5 ug/L



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-8
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	10	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-8
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	70	(22-135)	(10-155)
Fluorobiphenyl	87	(34-140)	(12-153)
Terphenyl-d14	85	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-8
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	69	(17-95)	(24-118)
Phenol-d5	63	(11-89)	(17-124)
2,4,6-Tribromophenol	73	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0108-8

MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-8
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	4
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	97	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,1,2-Trichloro,1,2,2-trifloro ethane	12 ug/L
1,3,5-Trimethyl benzene	29 ug/L
1,2-Diethyl benzene	7 ug/L
1-Ethyl-2,4-dimethyl benzene	9 ug/L
	6 ug/L
2,3-Dihydro-1-methyl-1H-indene	9 ug/L



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a,h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	64	(22-135)	(10-155)
Fluorobiphenyl	72	(34-140)	(12-153)
Terphenyl-d14	88	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	76	(17-95)	(24-118)
Phenol-d5	77	(11-89)	(17-124)
2,4,6-Tribromophenol	66	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 9/ 1/92

LAB #: 2I0108-11

MATRIX : WATER

SAMPLE ID : DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)

**WADSWORTH/ALERT Laboratories**

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-9
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: MW-9

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	5
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	93	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-9
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-9

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-9
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-9

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	68	(22-135)	(10-155)
Fluorobiphenyl	80	(34-140)	(12-153)
Terphenyl-d14	74	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-9
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-9

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	72	(17-95)	(24-118)
Phenol-d5	64	(11-89)	(17-124)
2,4,6-Tribromophenol	70	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-9
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-9

NADEP PEN 3221SW

METALS ANALYTICAL REPORT
SELECTED LIST

CERTIFICATION #: E84059
HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-9
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-9

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	11 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	25
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

CERTIFICATION #: E84059
HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

CERTIFICATION #: E84059
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	67	(22-135)	(10-155)
Fluorobiphenyl	74	(34-140)	(12-153)
Terphenyl-d14	83	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	77	(17-95)	(24-118)
Phenol-d5	73	(11-89)	(17-124)
2,4,6-Tribromophenol	29	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

Heptadecane-(8)-Carbonic Acid-(1)
1-Unknown

13 ug/L
19 ug/L



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 9/ 1/92

LAB #: 2I0108-10

MATRIX : WATER

SAMPLE ID : MW-10

NADEP PEN 3221SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0108-10

MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-10

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0107-35
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/11/92

SAMPLE ID: EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	106	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0107-35
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 4/92
DATE ANALYZED: 9/23/92

SAMPLE ID: EQUIPMENT BLANK (3221SW) NADEP PEN 2662W

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

CERTIFICATION #: E84059
HRS84297

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0107-35
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 4/92
DATE ANALYZED: 9/23/92

SAMPLE ID: EQUIPMENT BLANK (3221SW) NADEP PEN 2662W

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	65	(22-135)	(10-155)
Fluorobiphenyl	77	(34-140)	(12-153)
Terphenyl-d14	110	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0107-35
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 4/92
DATE ANALYZED: 9/23/92

SAMPLE ID: EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	66	(17-95)	(24-118)
Phenol-d5	72	(11-89)	(17-124)
2,4,6-Tribromophenol	72	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 9/ 1/92

LAB #: 210107-35

MATRIX : WATER

SAMPLE ID : EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/12- 9/13/92	ND	10	ug/L
Cadmium	9/12- 9/13/92	ND	10	ug/L
Chromium	9/12- 9/13/92	ND	50	ug/L
Lead	9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0107-35
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-12
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: TRIP BLANK

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	99	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

QUALITY CONTROL SECTION

- **Quality Control Summary**
- **Laboratory Blanks**
- **Laboratory Control Sample**
- **Matrix Spike/Matrix Spike Duplicate Results**
- **Sample Custody Documentation**



WADSWORTH/ALERT Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



WADSWORTH/ALERT Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery

determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.		accep. method perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	5
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	87	(75-123)	(85-126)	(85-138)
Toluene-d8	97	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	11
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	98	(75-123)	(85-126)	(85-138)
Toluene-d8	98	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 4/92

SAMPLE ID: LABORATORY BLANK

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	9
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	99	(75-123)	(85-126)	(85-138)
Toluene-d8	95	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/17/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a,h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/17/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	51	(22-135)	(10-155)
Fluorobiphenyl	80	(34-140)	(12-153)
Terphenyl-d14	82	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/17/92

SAMPLE ID: LABORATORY BLANK

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	76	(17-95)	(24-118)
Phenol-d5	75	(11-89)	(17-124)
2,4,6-Tribromophenol	82	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0108-BK

MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W3854

DATE EXTRACTED: N/A
DATE ANALYZED : 09/02/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W3854	90	40 56-133
Trichloroethene		95	20 67-106
Chlorobenzene		91	21 78-122
Toluene		94	30 64-128
Benzene		94	21 83-123
Dichlorobromomethane		96	25 71-123



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W3877

DATE EXTRACTED: N/A
DATE ANALYZED : 09/03/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W3877	98	40 56-133
Trichloroethene		98	20 67-106
Chlorobenzene		90	21 78-122
Toluene		102	30 64-128
Benzene		103	21 83-123
Dichlorobromomethane		97	25 71-123



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W3891

DATE EXTRACTED: N/A
DATE ANALYZED : 09/04/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W3891	87	40 56-133
Trichloroethene		92	20 67-106
Chlorobenzene		91	21 78-122
Toluene		103	30 64-128
Benzene		104	21 83-123
Dichlorobromomethane		100	25 71-123



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 625
RUN ID : C0445

DATE EXTRACTED: 09/02/92
DATE ANALYZED : 09/17/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS	QC LIMITS	
		%REC	RPD	%REC
1,4-Dichlorobenzene	C0445	52	29	17-104
N-Nitrosodi-n-propylamine		52	43	36-124
1,2,4 Trichlorobenzene		84	30	20-109
Acenaphthene		106	37	54-129
2,4-Dinitrotoluene		104	32	27-123
Pyrene		80	47	34-128



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 625
RUN ID : C0445

DATE EXTRACTED: 09/02/92
DATE ANALYZED : 09/17/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS	
			RPD	%REC
Phenol	C0445	80	45	17-108
2-Chlorophenol		72	37	10-118
4-Chloro-3-methylphenol		55	48	23-121
4-Nitrophenol		84	56	10-142
Pentachlorophenol		81	49	10-128



WADSWORTH/ALERT Laboratories

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
Arsenic (furnace)	09/10/92	09/13/92	94	38 53-131	LCS
Cadmium	09/10/92	09/13/92	97	18 77-113	
Chromium	09/10/92	09/13/92	94	21 79-121	
Lead (furnace)	09/10/92	09/12/92	102	33 64-132	



WADSWORTH/ALERT Laboratories

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	09/09/92	09/09/92	97	24 75-124	LCS
TRPH (IR)	09/09/92	09/09/92	98	24 75-124	



WADSWORTH/ALERT Laboratories

LAB ID : 2I0108-1
MATRIX : WATER
METHOD : 624
RUN ID : W3895/W3896

DATE RECEIVED : 09/01/92
DATE PREPARED : N/A
DATE ANALYZED : 09/04/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS	MSD	RPD	QC LIMITS	
		%REC	%REC		RPD	%REC
1,1-Dichloroethene	W3895/W3896	100	99	1	19	63-123
Trichloroethene		96	97	1	10	75-115
Chlorobenzene		95	95	0	13	74-113
Toluene		106	104	2	23	75-122
Benzene		105	106	1	16	76-126
Dichlorobromomethane		96	96	0	15	67-114

* = Diluted Out



WADSWORTH/ALERT Laboratories

LAB ID : 2I0108-3
MATRIX : WATER
METHOD : 625
RUN ID : E1241/E1242

DATE RECEIVED : 09/02/92
DATE PREPARED : 09/02/92
DATE ANALYZED : 09/23/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC
1,4-Dichlorobenzene	E1241/E1242	62	57	8	20 16-56
N-Nitrosodi-n-propylamine		70	66	6	29 40-127
1,2,4 Trichlorobenzene		61	53	14	15 27-65
Acenaphthene		107	98	9	24 57-104
2,4-Dinitrotoluene		84	82	2	22 22-81
Pyrene		89	82	8	30 58-148

* = Diluted Out



WADSWORTH/ALERT Laboratories

LAB ID : 2I0108-3
MATRIX : WATER
METHOD : 625
RUN ID : E1241/E1242

DATE RECEIVED : 09/01/92
DATE PREPARED : 09/02/92
DATE ANALYZED : 09/23/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC
Phenol	E1241/E1242	61	64	5	23 15-97
2-Chlorophenol		67	58	14	21 17-89
4-Chloro-3-methylphenol		79	73	8	36 08-101
4-Nitrophenol		52	69	28	34 13-99
Pentachlorophenol		22	26	17	42 13-96

* = Diluted Out



WADSWORTH/ALERT Laboratories

LAB ID : 2I0108-3,4
MATRIX : WATER

DATE RECEIVED : 09/01/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC	LAB ID
Arsenic (furnace)	09/13/92	09/13/92	104	105	1	19 80-119	2I0108-
Cadmium	09/13/92	09/13/92	96	92	4	15 76-110	
Chromium	09/13/92	09/13/92	93	92	1	21 74-117	
Lead (furnace)	09/13/92	09/12/92	89	90	1	24 76-124	

* = Diluted out



WADSWORTH/ALERT Laboratories

LAB ID : 2I0108-3,4
MATRIX : WATER

DATE RECEIVED : 09/01/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC	LAB ID
Arsenic (furnace)	09/13/92	09/13/92	104	105	1	19 80-119	2I0108-3
Cadmium	09/13/92	09/13/92	96	92	4	15 76-110	
Chromium	09/13/92	09/13/92	93	92	1	21 74-117	
Lead (furnace)	09/13/92	09/12/92	89	90	1	24 76-124	

* = Diluted out



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-BK
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W2522

DATE EXTRACTED: N/A
DATE ANALYZED : 04/17/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W2522	105	40 56-133
Trichloroethene		89	20 67-106
Chlorobenzene		89	21 78-122
Toluene		96	30 64-128
Benzene		94	21 83-123
Dichlorobromomethane		88	25 71-123



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W2545

DATE EXTRACTED: N/A
DATE ANALYZED : 04/20/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W2545	100	40 56-133
Trichloroethene		88	20 67-106
Chlorobenzene		84	21 78-122
Toluene		98	30 64-128
Benzene		94	21 83-123
Dichlorobromomethane		90	25 71-123



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS
MATRIX : WATER
METHOD : 625
RUN ID : S9333

DATE EXTRACTED: 04/16/92
DATE ANALYZED : 04/24/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS	
			RPD	%REC
1,4-Dichlorobenzene	S9333	46	30	31-99
N-Nitrosodi-n-propylamine		48	41	42-125
1,2,4 Trichlorobenzene		59	43	20-111
Acenaphthene		60	36	31-105
2,4-Dinitrotoluene		37	40	22-107
Pyrene		62	32	12-108



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS
MATRIX : WATER
METHOD : 625
RUN ID : S9333

DATE EXTRACTED: 04/16/92
DATE ANALYZED : 04/24/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS	QC LIMITS	
		%REC	RPD	%REC
Phenol	S9333	27	37	12-90
2-Chlorophenol		41	33	30-100
4-Chloro-3-methylphenol		44	32	12-109
4-Nitrophenol		26	42	10-102
Pentachlorophenol		58	42	10-100



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
Arsenic (furnace)	04/28/92	04/28/92	88	38 53-131	LCS
Cadmium	04/28/92	04/28/92	97	18 77-113	
Chromium	04/28/92	04/28/92	112	21 79-121	
Lead (furnace)	04/28/92	04/28/92	99	33 64-132	



WADSWORTH/ALERT
LABORATORIES

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
METALS

ELEMENT	DATE	DATE	LCS	QC LIMITS	
	PREPARED	ANALYZED	%REC	RPD	%REC
TRPH (IR)	04/30/92	05/01/92	100	24 75-124	LCS



WADSWORTH/ALERT
LABORATORIES

LAB ID : 2D1601-1
MATRIX : WATER
METHOD : 624
RUN ID : W2559/W2560

DATE RECEIVED : 04/16/92
DATE PREPARED : N/A
DATE ANALYZED : 04/21/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS	MSD	RPD	QC LIMITS	
		%REC	%REC		RPD	%REC
1,1-Dichloroethene	W2559/W2560	102	102	0	19	63-123
Trichloroethene		88	90	2	10	75-115
Chlorobenzene		88	86	2	13	74-113
Toluene		99	99	0	23	75-122
Benzene		96	96	0	16	76-126
Dichlorobromomethane		86	88	2	15	67-114

* - Diluted Out



WADSWORTH/ALERT
LABORATORIES

LAB ID : 2D1601-6
MATRIX : WATER
METHOD : 625
RUN ID : S9340/S9341

DATE RECEIVED : 04/16/92
DATE PREPARED : 04/16/92
DATE ANALYZED : 04/24/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS	MSD	QC LIMITS		
		%REC	%REC	RPD	RPD	%REC
1,4-Dichlorobenzene	S9340/S9341	47	46	2	20	16-56
N-Nitrosodi-n-propylamine		57	57	0	29	40-127
1,2,4 Trichlorobenzene		65	61	6	15	27-65
Acenaphthene		60	58	3	24	57-104
2,4-Dinitrotoluene		67	65	3	22	22-81
Pyrene		81	83	2	30	58-148

* - Diluted Out



WADSWORTH/ALERT
LABORATORIES

LAB ID : 2D1601-6
MATRIX : WATER
METHOD : 625
RUN ID : S9340/S9341

DATE RECEIVED : 04/16/92
DATE PREPARED : 04/16/92
DATE ANALYZED : 04/24/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS	MSD	QC LIMITS		
		%REC	%REC	RPD	RPD	%REC
Phenol	S9340/S9341	30	37	21	23	15-97
2-Chlorophenol		37	38	3	21	17-89
4-Chloro-3-methylphenol		48	52	8	36	08-101
4-Nitrophenol		54	58	7	34	13-99
4-Nitrophenol		54	58	7	34	13-99
Pentachlorophenol		33	44	29	42	13-96

* - Diluted Out

**WADSWORTH/ALERT LABORATORIES
SAMPLE SHIPPER EVALUATION AND RECEIPT FORM**

Client: ABB Project Name/Number: NADEP Plan
 Samples Received By: Carol McNulty Date Received: 4/16/92
 (Signature)
 Sample Evaluation Form By: Carol McNulty LAB No: 4265/201601-1613
 (Signature)

Type of shipping container samples received in? WAL Cooler X
 Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

- | | YES | NO |
|--|-------------|-------------|
| 1. Were custody seals on shipping container(s) intact? | <u>X</u> | <u> </u> |
| 2. Were custody papers properly included with samples? | <u>X</u> | <u> </u> |
| 3. Were custody papers properly filled out (ink, signed, match labels)? | <u>X</u> | <u> </u> |
| 4. Did all bottles arrive in good condition (unbroken)? | <u> </u> | <u>X</u> |
| 5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)? | <u>X</u> | <u> </u> |
| 6. Were correct bottles used for the tests indicated? | <u>X</u> | <u> </u> |
| 7. Were proper sample preservation techniques indicated? | <u>X</u> | <u> </u> |
| 8. Were samples received within adequate holding time? | <u>X</u> | <u> </u> |
| 9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section) | <u>X</u> | <u> </u> |
| 10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW) | <u>X</u> | <u> </u> |
| 11. Were samples accepted into the laboratory? (If no see comments) | <u>X</u> | <u> </u> |

Cooler # 110 Temp 6 °C Cooler # 187 Temp 5 °C
 Cooler # 47 Temp 6 °C Cooler # Temp °C

Comments: ^{NE} (3221-MW10-BNA bottle broken when rec'd) ^{both} attest listed!
Csc not filled out as to what parameters (VOC, PAH, Metals, TRPH)
Bottle labels have these parameters - 624, BNA, TRPH, AsCd, Cr, Pb



WADSWORTH/ALERT
LABORATORIES
Sampling, testing, mobile labs

5910 Breckenridge Pkwy.
Suite H
Tampa, FL 33610

Chain of Custody Record

(813) 621-0784
Fax (813) 623-6021

Record _____ of _____

05634

Client:		Project Name / Location NADER PEN			No. Of CON-TAINERS	Parameter													Remarks	
Sampler(s) <i>Roger Del...</i>		Project #:				VOC -	PAH -	METALS -	TRPH -	EDB -										
Item #	Date	Time	MATRIX	Sample Location																
124	4/15/92	1015	WATER	3221 SW - EQUIP BLANK	6	2	2	1	1											
11	4/15/92	1035	WATER	345W - MW2	6	2	2	1	1											
-3	4/15/92	1135	WATER	3221 SW - MW3	6	2	2	1	1											
-2	4/15/92	1147	WATER	3221 SW - MW2	6	2	2	1	1											
-1	4/15/92	1200	WATER	3221 SW - MW1	6	2	2	1	1											
-6	4/15/92	1210	WATER	3221 SW - DUPLICATE	6	2	2	1	1											
6	4/15/92	1220	WATER	3221 SW - MW5	6	2	2	1	1											
8	4/15/92	1230	WATER	3221 SW MW4	6	2	2	1	1											
10	4/15/92	1517	WATER	3221 NE - MW10	6	2	2	1	1											both bottles for ENA acid broken
10	4/15/92	1505	WATER	3221 NE - MW6	2	2														
31	4/8/92	1025	WATER	TRIP BLANK	2	2														

Total Containers

58

Number of Coolers in Shipment

3

Bailers

Report To:

Transfer Number

Item Number(s)

Relinquished By / Company

Accepted By / Company

Date

Time

Additional Comments:

1

2

3

4

5

6

Roger Del... 1715
4/15/92

Wadsworth/Alert
Carol McNulty

4/16/92

10:15

Original Accompanies Shipment



WADSWORTH/ALERT
LABORATORIES
Sampling, testing, mobile labs

5910 Breckenridge Pkwy.
Suite H
Tampa, FL 33610

Chain of Custody Record

(813) 621-0784
Fax (813) 623-6021

Record _____ of _____

05633

Client:		Project Name / Location NADEP PEN			No. Of CON- TAINERS	Parameter												Remarks		
Sampler(s) <i>Ryan Del</i>		Project #:				VOC -	PAH -	METALS -	TRPH -	EDB -										
Item #	Date	Time	MATRIX	Sample Location																
8 ✓	4/15/92	1510	WATER	3221 NE - MW 9	2	2														
10 ✓	4/15/92	1508	WATER	3221 NE - MW 11	2	2														
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				

Total
Containers

4

Number of Coolers in Shipment

3

Bailers

0

Report To:

Transfer
Number

Item
Number(s)

Relinquished By / Company

Accepted By / Company

Date

Time

Additional Comments:

1

2

3

4

5

6

Ryan Del 4/15/92
1715

Wadsworth/Alert
Carol Mc Kulty

4/16/92

10:15

Original Accompanies Shipment

GROUNDWATER SAMPLE ANALYSES

August 29, 1992



WADSWORTH/ALERT Laboratories
Division of Ensco Incorporated

5910 Breckenridge Parkway, Suite H
Tampa, FL 33610

813-621-0784
FAX 813-623-6021

ANALYTICAL REPORT

SUBCONTRACT NUMBER: 1-08-134

TASK ORDER NUMBER: 0015

NADEP PENSACOLA

Presented to:

PETER REDFERN

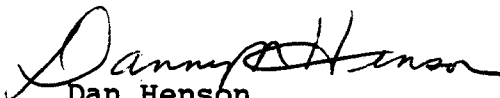
ABB ENVIRONMENTAL SERVICES, INC.

WADSWORTH/ALERT LABORATORIES

5910 BRECKENRIDGE PARKWAY, SUITE H

TAMPA, FL 33610

(813) 621-08784


Dan Henson
Project Manager


Randall C. Grubbs
Laboratory Director - Florida

September 24, 1992



WADSWORTH/ALERT Laboratories

INVOLVEMENT

This report summarizes the analytical results of the NADEP Pensacola site submitted by ABB Environmental Services, Inc. to Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Peter Redfern. The samples were accepted into Wadsworth's Florida facility on 01 September 1992, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.

Laboratory ID #
2I0108-2,9,10,11,12

Narrative

The concurrently analyzed laboratory blanks associated with the volatile organic analysis of these samples contained methylene chloride at greater than five times the reported detection limit. Methylene chloride is a common laboratory contaminant and its presence in the samples should be considered suspect.



WADSWORTH/ALERT Laboratories

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER

METHOD

Volatile Organics

** EPA Method 624

Base/Neutral Acid Extractables

** EPA Method 625

METALS

Arsenic

** EPA Method 206.2

Cadmium

** EPA Method 200.7

Chromium

** EPA Method 200.7

Lead

** EPA Method 239.2

MISCELLANEOUS

Tot. Rec. Petroleum Hydrocarbons

** EPA Method 418.1

NOTE:

** Indicates usage of this method to obtain results for this report.

(D)

EPA Methods

Indicates draft version of this method was used
Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982

Std. Methods

Drinking Waters USEPA, 600/4-88/039, December, 1988.
Standard Methods for the Examination of Water and Waste-water, APHA, 16th edition, 1985.

USEPA Methods

From 40CFR Part 136, published in Federal Register on October 26, 1984.

SW846 Methods

Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

ASTM Methods

American Society for Testing and Materials.

NIOSH Method

NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-1

NADEP PEN 3221SW

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	5 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	95	(75-123)	(85-126)	(85-138)
Toluene-d8	97	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-1

NADEP PEN 3221SW

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

CERTIFICATION #: E84059
HRS84297

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzydine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-1

NADEP PEN 3221SW

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

CERTIFICATION #: E84059
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	63	(22-135)	(10-155)
Fluorobiphenyl	65	(34-140)	(12-153)
Terphenyl-d14	88	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-1

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	71	(17-95)	(24-118)
Phenol-d5	61	(11-89)	(17-124)
2,4,6-Tribromophenol	62	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 9/ 1/92

LAB #: 2I0108-1

MATRIX : WATER

SAMPLE ID : MW-1

NADEP PEN 3221SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-1
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-1

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-2
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: MW-2

NADEP PEN 3221SW

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	98	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-2
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-2

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-2
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-2

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	63	(22-135)	(10-155)
Fluorobiphenyl	67	(34-140)	(12-153)
Terphenyl-d14	82	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-2
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-2

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	79	(17-95)	(24-118)
Phenol-d5	69	(11-89)	(17-124)
2,4,6-Tribromophenol	59	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-2
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-2

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-2
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-2

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-3
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	7 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	94	(75-123)	(85-126)	(85-138)
Toluene-d8	96	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	101	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-3
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-3
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	65	(22-135)	(10-155)
Fluorobiphenyl	70	(34-140)	(12-153)
Terphenyl-d14	83	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-3
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-3

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	55	(17-95)	(24-118)
Phenol-d5	44	(11-89)	(17-124)
2,4,6-Tribromophenol	45	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 9/ 1/92

LAB #: 2I0108-3

MATRIX : WATER

SAMPLE ID : MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-3
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-3

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	7 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	94	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a,h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzydine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	66	(22-135)	(10-155)
Fluorobiphenyl	74	(34-140)	(12-153)
Terphenyl-d14	94	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	69	(17-95)	(24-118)
Phenol-d5	63	(11-89)	(17-124)
2,4,6-Tribromophenol	46	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-4

NADEP PEN 3221SW

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1-Unknown

11 ug/L



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-4

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-4
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-4

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	7 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	95	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	101	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1-Ethyl-2-methyl benzene	11 ug/L
1,3,5-Trimethyl benzene	100 ug/L
1,2-Diethyl benzene	20 ug/L
Substituted benzene	14 ug/L
1,3-Diethyl benzene	11 ug/L
2-Ethyl-1,3-dimethyl benzene	42 ug/L
4-Ethyl-1,2-dimethyl benzene	24 ug/L
2,3-Dihydro-1-methyl-1H-indene	26 ug/L
1,2,3,5-Tetra methyl benzene	21 ug/L
1,2,3,4-Tetra methyl benzene	15 ug/L



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	57	(22-135)	(10-155)
Fluorobiphenyl	64	(34-140)	(12-153)
Terphenyl-d14	60	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-5

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	73	(17-95)	(24-118)
Phenol-d5	66	(11-89)	(17-124)
2,4,6-Tribromophenol	63	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-5

NADEP PEN 3221SW

METALS ANALYTICAL REPORT
SELECTED LIST

CERTIFICATION #: E84059
HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-5
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-5

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	99	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	102	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,3,5-Trimethyl benzene	13 ug/L
2-Ethyl-1,4-dimethyl benzene	7 ug/L
1-Methyl-2-(1-methylethyl) benzene	6 ug/L
1-Methyl-4-(1-methylethyl) benzene	6 ug/L



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a,h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzydine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	71	(22-135)	(10-155)
Fluorobiphenyl	83	(34-140)	(12-153)
Terphenyl-d14	83	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-6

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	82	(17-95)	(24-118)
Phenol-d5	77	(11-89)	(17-124)
2,4,6-Tribromophenol	89	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-6
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-6

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-6
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-6

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-7

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	4
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-7

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo (a) anthracene	ND*	1,3-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	1,4-Dichlorobenzene	ND
		3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-7

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	60	(22-135)	(10-155)
Fluorobiphenyl	71	(34-140)	(12-153)
Terphenyl-d14	79	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-7

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	64	(17-95)	(24-118)
Phenol-d5	57	(11-89)	(17-124)
2,4,6-Tribromophenol	75	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-7

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-7
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-7

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-8
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	3
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	102	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-8
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 2/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,3,5-Trimethyl benzene	34 ug/L
1,2-Diethyl benzene	8 ug/L
1-Methyl-3-(1-methylethyl) benzene	10 ug/L
4-Ethyl-1,2-dimethyl benzene	9 ug/L
2,3-Dihydro-1-methyl-1H-indene	12 ug/L
1,2,3,5-Tetra methyl benzene	6 ug/L
1,2,3,4-Tetra methyl benzene	5 ug/L



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-8
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	10	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-8
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

CERTIFICATION #: E84059
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	70	(22-135)	(10-155)
Fluorobiphenyl	87	(34-140)	(12-153)
Terphenyl-d14	85	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-8
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-8

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	69	(17-95)	(24-118)
Phenol-d5	63	(11-89)	(17-124)
2,4,6-Tribromophenol	73	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-8
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-8
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-8

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	4
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	97	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,1,2-Trichloro,1,2,2-trifloro ethane	12 ug/L
1,3,5-Trimethyl benzene	29 ug/L
1,2-Diethyl benzene	7 ug/L
1-Ethyl-2,4-dimethyl benzene	9 ug/L
	6 ug/L
2,3-Dihydro-1-methyl-1H-indene	9 ug/L



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(k)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(ghi)perylene	ND	Diethyl phthalate	ND
Benzo(a)pyrene	ND	Dimethyl phthalate	ND
Bis(2-Chloroethoxy)methane	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroisopropyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluoranthene	ND
4-Bromophenyl phenyl ether	ND	Fluorene	ND
Butyl benzyl phthalate	ND	Hexachlorobenzene	ND
2-Chloronaphthalene	ND	Hexachlorobutadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachlorocyclopentadiene	ND
Chrysene	ND	Hexachloroethane	ND
		Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	64	(22-135)	(10-155)
Fluorobiphenyl	72	(34-140)	(12-153)
Terphenyl-d14	88	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	76	(17-95)	(24-118)
Phenol-d5	77	(11-89)	(17-124)
2,4,6-Tribromophenol	66	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : DUPLICATE

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-11
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : DUPLICATE

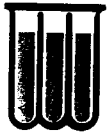
NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0108-9

MATRIX: WATER

DATE RECEIVED: 9/ 1/92

DATE EXTRACTED: NA

DATE ANALYZED: 9/ 3/92

SAMPLE ID: MW-9

NADEP PEN 3221SW

CERTIFICATION #: E84059

HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	5
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	93	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 210108-9

MATRIX: WATER

DATE RECEIVED: 9/ 1/92

DATE EXTRACTED: 9/ 2/92

DATE ANALYZED: 9/23/92

SAMPLE ID: MW-9

NADEP PEN 3221SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-9
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-9

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	68	(22-135)	(10-155)
Fluorobiphenyl	80	(34-140)	(12-153)
Terphenyl-d14	74	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-9
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-9

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	72	(17-95)	(24-118)
Phenol-d5	64	(11-89)	(17-124)
2,4,6-Tribromophenol	70	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-9
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-9

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-9
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-9

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	11 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	25
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

CERTIFICATION #: E84059
HRS84297

Acenaphthene	ND	Dibenzo (a,h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzdine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	67	(22-135)	(10-155)
Fluorobiphenyl	74	(34-140)	(12-153)
Terphenyl-d14	83	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	77	(17-95)	(24-118)
Phenol-d5	73	(11-89)	(17-124)
2,4,6-Tribromophenol	29	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-10
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/23/92

SAMPLE ID: MW-10

NADEP PEN 3221SW

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

Heptadecane-(8)-Carbonic Acid-(1)
1-Unknown

13 ug/L
19 ug/L



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 9/ 1/92

LAB #: 2I0108-10

MATRIX : WATER

SAMPLE ID : MW-10

NADEP PEN 3221SW

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-10
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : MW-10

NADEP PEN 3221SW

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0107-35
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/11/92

SAMPLE ID: EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	106	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0107-35
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 4/92
DATE ANALYZED: 9/23/92

SAMPLE ID: EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0107-35
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 4/92
DATE ANALYZED: 9/23/92

SAMPLE ID: EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	65	(22-135)	(10-155)
Fluorobiphenyl	77	(34-140)	(12-153)
Terphenyl-d14	110	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0107-35

MATRIX: WATER

DATE RECEIVED: 9/ 1/92

DATE EXTRACTED: 9/ 4/92

DATE ANALYZED: 9/23/92

SAMPLE ID: EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	66	(17-95)	(24-118)
Phenol-d5	72	(11-89)	(17-124)
2,4,6-Tribromophenol	72	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 9/ 1/92

LAB #: 2I0107-35

MATRIX : WATER

SAMPLE ID : EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/12- 9/13/92	ND	10	ug/L
Cadmium	9/12- 9/13/92	ND	10	ug/L
Chromium	9/12- 9/13/92	ND	50	ug/L
Lead	9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0107-35
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : EQUIPMENT BLANK(3221SW) NADEP PEN 2662W

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-12
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: TRIP BLANK

NADEP PEN 3221SW

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	99	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

QUALITY CONTROL SECTION

- **Quality Control Summary**
- **Laboratory Blanks**
- **Laboratory Control Sample**
- **Matrix Spike/Matrix Spike Duplicate Results**
- **Sample Custody Documentation**



WADSWORTH/ALERT Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



WADSWORTH/ALERT Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery

determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.		accep. method perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.

LAB #: 2I0108-BK

MATRIX: WATER

DATE RECEIVED: 9/ 1/92

DATE EXTRACTED: NA

DATE ANALYZED: 9/ 2/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059

HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	5
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	87	(75-123)	(85-126)	(85-138)
Toluene-d8	97	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 3/92

SAMPLE ID: LABORATORY BLANK

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

CERTIFICATION #: E84059
HRS84297

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	11
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	98	(75-123)	(85-126)	(85-138)
Toluene-d8	98	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: NA
DATE ANALYZED: 9/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene (Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	9
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene (Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	99	(75-123)	(85-126)	(85-138)
Toluene-d8	95	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 210108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/17/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo (a, h) anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo (a) anthracene	ND	1,4-Dichlorobenzene	ND
Benzo (b) fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo (k) fluoranthene	ND	Diethyl phthalate	ND
Benzo (ghi) perylene	ND	Dimethyl phthalate	ND
Benzo (a) pyrene	ND	2,4-Dinitrotoluene	ND
Bis (2-Chloroethoxy) methane	ND	2,6-Dinitrotoluene	ND
Bis (2-Chloroethyl) ether	ND	Di-n-octyl phthalate	ND
Bis (2-Chloroisopropyl) ether	ND	Fluoranthene	ND
Bis (2-Ethylhexyl) phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno (1,2,3-cd) pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/17/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)
HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	51	(22-135)	(10-155)
Fluorobiphenyl	80	(34-140)	(12-153)
Terphenyl-d14	82	(10-132)	(13-140)



WADSWORTH/ALERT Laboratories

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX: WATER

DATE RECEIVED: 9/ 1/92
DATE EXTRACTED: 9/ 2/92
DATE ANALYZED: 9/17/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	76	(17-95)	(24-118)
Phenol-d5	75	(11-89)	(17-124)
2,4,6-Tribromophenol	82	(10-134)	(10-156)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/10- 9/13/92	ND	10	ug/L
Cadmium	9/10- 9/13/92	ND	10	ug/L
Chromium	9/10- 9/13/92	ND	50	ug/L
Lead	9/10- 9/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2I0108-BK
MATRIX : WATER

DATE RECEIVED: 9/ 1/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	9/ 9/92	ND	1 mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W3854

DATE EXTRACTED: N/A
DATE ANALYZED : 09/02/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W3854	90	40 56-133
Trichloroethene		95	20 67-106
Chlorobenzene		91	21 78-122
Toluene		94	30 64-128
Benzene		94	21 83-123
Dichlorobromomethane		96	25 71-123



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W3877

DATE EXTRACTED: N/A
DATE ANALYZED : 09/03/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W3877	98	40 56-133
Trichloroethene		98	20 67-106
Chlorobenzene		90	21 78-122
Toluene		102	30 64-128
Benzene		103	21 83-123
Dichlorobromomethane		97	25 71-123



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 624
RUN ID : W3891

DATE EXTRACTED: N/A
DATE ANALYZED : 09/04/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS RPD %REC
1,1-Dichloroethene	W3891	87	40 56-133
Trichloroethene		92	20 67-106
Chlorobenzene		91	21 78-122
Toluene		103	30 64-128
Benzene		104	21 83-123
Dichlorobromomethane		100	25 71-123



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 625
RUN ID : C0445

DATE EXTRACTED: 09/02/92
DATE ANALYZED : 09/17/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS	
			RPD	%REC
1,4-Dichlorobenzene	C0445	52	29	17-104
N-Nitrosodi-n-propylamine		52	43	36-124
1,2,4 Trichlorobenzene		84	30	20-109
Acenaphthene		106	37	54-129
2,4-Dinitrotoluene		104	32	27-123
Pyrene		80	47	34-128



WADSWORTH/ALERT Laboratories

LAB ID : LCS
MATRIX : WATER
METHOD : 625
RUN ID : C0445

DATE EXTRACTED: 09/02/92
DATE ANALYZED : 09/17/92

LABORATORY CONTROL SAMPLE RESULTS

COMPOUND	ANALYTICAL RUN ID #	LCS %REC	QC LIMITS	
			RPD	%REC
Phenol	C0445	80	45	17-108
2-Chlorophenol		72	37	10-118
4-Chloro-3-methylphenol		55	48	23-121
4-Nitrophenol		84	56	10-142
Pentachlorophenol		81	49	10-128



WADSWORTH/ALERT Laboratories

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
Arsenic (furnace)	09/10/92	09/13/92	94	38 53-131	LCS
Cadmium	09/10/92	09/13/92	97	18 77-113	
Chromium	09/10/92	09/13/92	94	21 79-121	
Lead (furnace)	09/10/92	09/12/92	102	33 64-132	



WADSWORTH/ALERT Laboratories

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	09/09/92	09/09/92	97	24 75-124	LCS
TRPH (IR)	09/09/92	09/09/92	98	24 75-124	



WADSWORTH/ALERT Laboratories

LAB ID : 2I0108-1
MATRIX : WATER
METHOD : 624
RUN ID : W3895/W3896

DATE RECEIVED : 09/01/92
DATE PREPARED : N/A
DATE ANALYZED : 09/04/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC
1,1-Dichloroethene	W3895/W3896	100	99	1	19 63-123
Trichloroethene		96	97	1	10 75-115
Chlorobenzene		95	95	0	13 74-113
Toluene		106	104	2	23 75-122
Benzene		105	106	1	16 76-126
Dichlorobromomethane		96	96	0	15 67-114

* = Diluted Out



WADSWORTH/ALERT Laboratories

LAB ID : 2I0108-3
MATRIX : WATER
METHOD : 625
RUN ID : E1241/E1242

DATE RECEIVED : 09/02/92
DATE PREPARED : 09/02/92
DATE ANALYZED : 09/23/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC
1,4-Dichlorobenzene	E1241/E1242	62	57	8	20 16-56
N-Nitrosodi-n-propylamine		70	66	6	29 40-127
1,2,4 Trichlorobenzene		61	53	14	15 27-65
Acenaphthene		107	98	9	24 57-104
2,4-Dinitrotoluene		84	82	2	22 22-81
Pyrene		89	82	8	30 58-148

* = Diluted Out



WADSWORTH/ALERT Laboratories

LAB ID : 2I0108-3
MATRIX : WATER
METHOD : 625
RUN ID : E1241/E1242

DATE RECEIVED : 09/01/92
DATE PREPARED : 09/02/92
DATE ANALYZED : 09/23/92

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	ANALYTICAL RUN ID #	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC
Phenol	E1241/E1242	61	64	5	23 15-97
2-Chlorophenol		67	58	14	21 17-89
4-Chloro-3-methylphenol		79	73	8	36 08-101
4-Nitrophenol		52	69	28	34 13-99
Pentachlorophenol		22	26	17	42 13-96

* = Diluted Out

GROUNDWATER SAMPLE ANALYSES

January 25, 1992



WADSWORTH/ALERT
LABORATORIES

5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

Since 1938

ANALYTICAL REPORT

SUBCONTRACT NUMBER: 1-08-134

TASK ORDER NUMBER: 0015

NAS/NADEP PENSACOLA - PHASE II

Presented to:

ROGER DURHAM

ABB ENVIRONMENTAL SERVICES, INC.

WADSWORTH/ALERT LABORATORIES

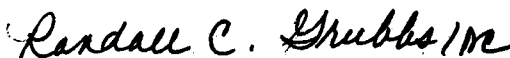
5910 BRECKENRIDGE PARKWAY, SUITE H

TAMPA, FL 33610

(813) 621-0784


Dan Henson

Project Manager



Randall C. Grubbs
Laboratory Director - Florida

February 12, 1992



HEADQUARTERS AND
LABORATORY
P.O. Box 2912
4101 Shuffel Drive, N.W.
North Canton, OH 44720
(216) 497-9396

REGIONAL
LABORATORY
P.O. Box 31454
5405 Schaaf Rd.
Cleveland, OH 44131
(216) 642-9151

REGIONAL
OFFICE
1445 Pisgah Church Rd.
Lexington, SC 29072
(803) 957-8590

REGIONAL
LABORATORY
5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610
(813) 621-0784



WADSWORTH/ALERT
LABORATORIES

5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

Since 1938

February 12, 1992

Mr. Roger Durham
ABB Environmental Services, Inc.
2571 Executive Center Circle East
Suite 100
Tallahassee, FL 32301

Dear Mr. Durham:

Over the course of the past month, it was noted that toluene has begun randomly appearing in samples, trip blanks and equipment blanks at levels ranging from about 2 ug/L to about 22 ug/L. We have investigated its presence and feel that we have located the source of this random contamination problem.


WAL began using custom printed sample container labels this past fall. At that time we evaluated the labels for any trace contaminants and found none. In late December we received a second shipment of identical labels and began using them for sampling kits sent out after 20 December 1991. The investigation of the toluene contamination led us to evaluate this second shipment of labels as well. Upon evaluation, it was found that these labels are contaminated with Toluene as well as 2-Butanone (MEK). Given that these are volatile compounds it can be demonstrated that, under certain conditions, these compounds might migrate across the septum of the sample vial.

We have discontinued use of these labels and are attempting to reissue new labels and bottles for any sample kits which are still pending. In addition we are working with the printer to determine why these labels were not made to our previously determined specifications. We have also established a policy of testing all label batches before they may be used in any kits.

The impact which these findings have on any recent or current analytical data must be determined on an individual basis. If you have any questions regarding this matter or would like to further investigate particular results, please contact your project manager or myself at (813) 621-0784. Thank you for your patience and help in this matter.

Sincerely,

Wadsworth/ALERT Laboratories



N. Myron Gunsalus, Jr.
Quality Control Coordinator



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INVOLVEMENT

This report summarizes the analytical results of the NAS/NADEP Pensacola - Phase II site submitted by ABB Environmental Services, Inc. to Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Roger Durham. The samples were accepted into Wadsworth's Florida facility on 28 January 1992, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.

Laboratory ID

2A2813-1,2,3,5,6,7

Narrative

The laboratory blank concurrently analyzed with these samples for volatile organic compounds contained methylene chloride. This compound is a common laboratory contaminant and its presence in the samples should be considered suspect.



WADSWORTH/ALERT
LABORATORIES

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER

METHOD

ORGANICS

Volatile Organics

** EPA Method 624

Base/Neutral Acid Extractables

** EPA Method 625

METALS

Arsenic

** EPA Method 206.2

Cadmium

** EPA Method 200.7

Chromium

** EPA Method 200.7

Lead

** EPA Method 239.2

MISCELLANEOUS

Tot. Rec. Petroleum Hydrocarbons

** EPA Method 418.1

NOTE: ** Indicates usage of this method to obtain results for this report.

EPA Methods -Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982

Drinking Waters USEPA, 600/4-88/039, December, 1988.

Std. Methods -Standard Methods for the Examination of Water and Wastewater, APHA, 16th edition, 1985.

USEPA Methods -From 40CFR Part 136, published in Federal Register on October 26, 1984.

SW846 Methods -Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

ASTM Methods -American Society for Testing and Materials.

NIOSH Method -NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

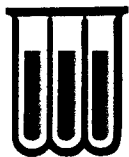
CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	12 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	106	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	119	(22-135)	(10-155)
Fluorobiphenyl	38	(34-140)	(12-153)
Terphenyl-d14	56	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND*
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	42	(17-95)	(24-118)
Phenol-d5	71	(11-89)	(17-124)
2,4,6-Tribromophenol	82	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-1
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	1 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-1
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

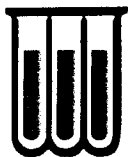
SAMPLE ID: MW 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-2
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	13 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	109	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-2
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(k)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(ghi)perylene	ND	Diethyl phthalate	ND
Benzo(a)pyrene	ND	Dimethyl phthalate	ND
Bis(2-Chloroethoxy)methane	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroisopropyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluoranthene	ND
4-Bromophenyl phenyl ether	ND	Fluorene	ND
Butyl benzyl phthalate	ND	Hexachlorobenzene	ND
2-Chloronaphthalene	ND	Hexachlorobutadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachlorocyclopentadiene	ND
Chrysene	ND	Hexachloroethane	ND
		Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-2
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	90	(22-135)	(10-155)
Fluorobiphenyl	36	(34-140)	(12-153)
Terphenyl-d14	62	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-2
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND*
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	34	(17-95)	(24-118)
Phenol-d5	53	(11-89)	(17-124)
2,4,6-Tribromophenol	78	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 1/28/92

LAB #: 2A2813-2

MATRIX : WATER

SAMPLE ID : PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

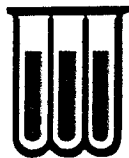
**METALS ANALYTICAL REPORT
SELECTED LIST**

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-2
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: PZ 1 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	15 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	15
2-Chloroethylvinyl ether	ND	Toluene	16
Chloroform	3	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	1	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	114	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Ben-zidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	91	(22-135)	(10-155)
Fluorobiphenyl	19	(34-140)	(12-153)
Terphenyl-d14	58	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND*
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	37	(17-95)	(24-118)
Phenol-d5	74	(11-89)	(17-124)
2,4,6-Tribromophenol	38	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-3
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : PZ 2 NADEP PENSACOLA/ 3221 SW

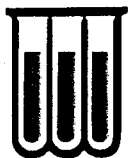
CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-3
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: PZ 2 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-4
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	79B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	9
2-Chloroethylvinyl ether	ND	Toluene	16
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	107	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-4
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

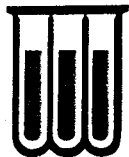
CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-4
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

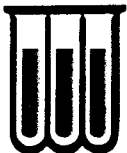
CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	130	(22-135)	(10-155)
Fluorobiphenyl	36	(34-140)	(12-153)
Terphenyl-d14	56	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-4
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	40	(17-95)	(24-118)
Phenol-d5	34	(11-89)	(17-124)
2,4,6-Tribromophenol	41	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 1/28/92

LAB #: 2A2813-4

MATRIX : WATER

SAMPLE ID : PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

**METALS ANALYTICAL REPORT
SELECTED LIST**

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-4
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: PZ 3 NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	18 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	112	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(k)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(ghi)perylene	ND	Diethyl phthalate	ND
Benzo(a)pyrene	ND	Dimethyl phthalate	ND
Bis(2-Chloroethoxy)methane	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroisopropyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluoranthene	ND
4-Bromophenyl phenyl ether	ND	Fluorene	ND
Butyl benzyl phthalate	ND	Hexachlorobenzene	ND
2-Chloronaphthalene	ND	Hexachlorobutadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachlorocyclopentadiene	ND
Chrysene	ND	Hexachloroethane	ND
		Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	88	(22-135)	(10-155)
Fluorobiphenyl	13	(34-140)	(12-153)
Terphenyl-d14	56	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

ACID EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	47	(17-95)	(24-118)
Phenol-d5	58	(11-89)	(17-124)
2,4,6-Tribromophenol	59	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-5
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-5
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

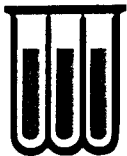
SAMPLE ID: DUPLICATE NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	13 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	108	(75-123)	(85-126)	(85-138)
Toluene-d8	103	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

Acetone

13 ug/L

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	104	(22-135)	(10-155)
Fluorobiphenyl	19	(34-140)	(12-153)
Terphenyl-d14	61	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 6/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	48	(17-95)	(24-118)
Phenol-d5	71	(11-89)	(17-124)
2,4,6-Tribromophenol	89	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-6
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4- 2/ 5/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-6
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-7
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: TRIP BLANK

NADEP PENSACOLA/ 3221 SW

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	14 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	3
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	2
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	114	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

QUALITY CONTROL SECTION

- **Quality Control Summary**
- **Laboratory Blanks**
- **Laboratory Control Sample**
- **Matrix Spike/Matrix Spike Duplicate Results**
- **Sample Custody Documentation**



WADSWORTH/ALERT
LABORATORIES QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



WADSWORTH/ALERT
LABORATORIES QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	QC LIMITS	
					RPD	RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150

(compd. name)	sample	1st%	2nd%	Rel.%	accep. method
	result	recov.	recov.	diff.	perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	108	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	101	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: LABORATORY BLANK

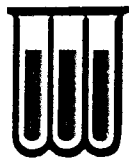
CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	1
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	103	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 5/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 5/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	41	(22-135)	(10-155)
Fluorobiphenyl	84	(34-140)	(12-153)
Terphenyl-d14	83	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX: WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/31/92
DATE ANALYZED: 2/ 5/92

SAMPLE ID: LABORATORY BLANK

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	19	(17-95)	(24-118)
Phenol-d5	14	(11-89)	(17-124)
2,4,6-Tribromophenol	15	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2813-BK
MATRIX : WATER

DATE RECEIVED: 1/28/92

SAMPLE ID : LABORATORY BLANK

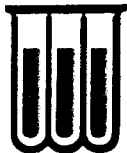
CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	2/ 4/92	ND	10 ug/L
Cadmium	2/ 4/92	ND	10 ug/L
Chromium	2/ 4/92	ND	50 ug/L
Lead	2/ 4/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2813-BK
MATRIX : WATER

DATE RECEIVED: 1/28/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-LCS
MATRIX: WATER
METHOD: 624

DATE RECEIVED: 01/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 02/04/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS %RECOVERY
1,1-Dichloroethene	68	56-133
Trichloroethene	96	67-106
Chlorobenzene	96	78-122
Toluene	97	64-128
Benzene	88	83-123
Dichlorobromomethane	87	71-123



WADSWORTH/ALERT
LABORATORIES

LAB #/: 2A2813-LCS
MATRIX: WATER
METHOD: 624

DATE RECEIVED: 01/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 02/05/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS %RECOVERY
1,1-Dichloroethene	101	56-133
Trichloroethene	95	67-106
Chlorobenzene	99	78-122
Toluene	94	64-128
Benzene	88	83-123
Dichlorobromomethane	82	71-123



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-LCS
MATRIX: WATER
METHOD: 625

DATE RECEIVED: 01/28/92
DATE EXTRACTED: 01/31/92
DATE ANALYZED: 02/05/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
1,2,4-Trichlorobenzene	69	20-111
Acenaphthene	96	31-105
2,4-Dinitrotoluene	64	22-107
Pyrene	107	12-108
Nitrosodipropylamine	106	42-125
1,4-Dichlorobenzene	82	31-99



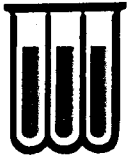
WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-LCS
MATRIX: WATER
METHOD: 625

DATE RECEIVED: 01/28/92
DATE EXTRACTED: 01/31/92
DATE ANALYZED: 02/05/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Pentachlorophenol	14	10-100
Phenol	57	12-90
2-Chlorophenol	64	30-100
4-Chloro-o-cresol	15	12-109
4-Nitrophenol	36	10-102



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-LCS
MATRIX: WATER

DATE RECEIVED: 01/28/92
DATE PREP'D: 02/04/92
DATE ANALYZED: 02/04/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Arsenic, furnace	80	54-130
Cadmium	104	78-113
Chromium	106	79-121
Lead, furnace	92	64-131



WADSWORTH/ALERT
LABORATORIES

LAB #/: 2A2813-LCS
MATRIX: WATER

DATE RECEIVED: 01/28/92
DATE EXTRACTED: 01/30/92
DATE ANALYZED: 01/30/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Tot. Rec. Petroleum Hydrocarbons	104	75-124



WADSWORTH/ALERT
LABORATORIES

LAB#: 2A2813-1
MATRIX: WATER
METHOD: 624

DATE RECEIVED: 01/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 02/05/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	MS %REC	MSD %REC	RPD	QC LIMITS RPD RECOVERY	
1,1-Dichloroethene	76	88	15	19	63-123
Trichloroethene	91	91	0	10	75-115
Chlorobenzene	91	92	1	13	74-113
Toluene	120	127	6	23	75-122
Benzene	83	88	6	16	76-126
Dichlorobromomethane	82	86	5	15	67-114



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2813-1,2
MATRIX: WATER

DATE RECEIVED: 01/28/92
DATE EXTRACTED: 02/04/92
DATE ANALYZED: 02/04/92 to
02/05/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - METALS

ELEMENT	MS %REC	MSD %REC	RPD	QC LIMITS	
				RPD	RECOVERY
Arsenic, furnace	86	90	4	19	80-119
Cadmium	102	103	1	15	76-110
Chromium	105	105	0	21	74-117
Lead, furnace	101	100	1	24	76-124

**WADSWORTH/ALERT LABORATORIES
SAMPLE SHIPPER EVALUATION AND RECEIPT FORM**

Client: Abb Project Name/Number: NADEP- Pensacola
Samples Received By: Carol McNulty Date Received: 1/28/92
(Signature)
Sample Evaluation Form By: Carol McNulty LAB No: 3744/2A 2813-167
(Signature)

Type of shipping container samples received in? WAL Cooler X

Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

	YES	NO
1. Were custody seals on shipping container(s) intact?	<u>X</u>	<u> </u>
2. Were custody papers properly included with samples?	<u>X</u>	<u> </u>
3. Were custody papers properly filled out (ink, signed, match labels)?	<u>X</u>	<u> </u>
4. Did all bottles arrive in good condition (unbroken)?	<u>X</u>	<u> </u>
5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	<u>X</u>	<u> </u>
6. Were correct bottles used for the tests indicated?	<u>X</u>	<u> </u>
7. Were proper sample preservation techniques indicated?	<u>X</u>	<u> </u>
8. Were samples received within adequate holding time?	<u>X</u>	<u> </u>
9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	<u>X</u>	<u> </u>
10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	<u>X</u>	<u> </u>
11. Were samples accepted into the laboratory? (If no see comments)	<u>X</u>	<u> </u>

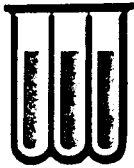
Cooler # Temp 4 °C Cooler # Temp °C
Cooler # Temp °C Cooler # Temp °C

Comments:

5910-H BRECKENRIDGE PARKWAY/TAMPA, FL 33610
(813) 621-0784 ✓

№ 4808

[illegible]



WADSWORTH/ALERT
LABORATORIES

Sampling, testing, mobile labs

5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Since 1938

February 12, 1992

Mr. Roger Durham
ABB Environmental Services, Inc.
2571 Executive Center Circle East
Suite 100
Tallahassee, FL 32301

Dear Mr. Durham:

Over the course of the past month, it was noted that toluene has begun randomly appearing in samples, trip blanks and equipment blanks at levels ranging from about 2 ug/L to about 22 ug/L. We have investigated its presence and feel that we have located the source of this random contamination problem.

WAL began using custom printed sample container labels this past fall. At that time we evaluated the labels for any trace contaminants and found none. In late December we received a second shipment of identical labels and began using them for sampling kits sent out after 20 December 1991. The investigation of the toluene contamination led us to evaluate this second shipment of labels as well. Upon evaluation, it was found that these labels are contaminated with Toluene as well as 2-Butanone (MEK). Given that these are volatile compounds it can be demonstrated that, under certain conditions, these compounds might migrate across the septum of the sample vial.

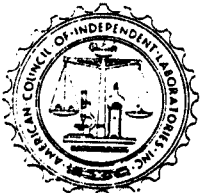
We have discontinued use of these labels and are attempting to reissue new labels and bottles for any sample kits which are still pending. In addition we are working with the printer to determine why these labels were not made to our previously determined specifications. We have also established a policy of testing all label batches before they may be used in any kits.

The impact which these findings have on any recent or current analytical data must be determined on an individual basis. If you have any questions regarding this matter or would like to further investigate particular results, please contact your project manager or myself at (813) 621-0784. Thank you for your patience and help in this matter.

Sincerely,

Wadsworth/ALERT Laboratories

N. Myron Gunsalus, Jr.
N. Myron Gunsalus, Jr.
Quality Control Coordinator



HEADQUARTERS AND
LABORATORY
P.O. Box 2912
4101 Shuffel Drive, N.W.
North Canton, OH 44720
(216) 497-9396

REGIONAL
LABORATORY
P.O. Box 31454
5405 Schaaf Rd.
Cleveland, OH 44131
(216) 642-9151

REGIONAL
OFFICE
1445 Pisgah Church Rd.
Lexington, SC 29072
(803) 957-8590

REGIONAL
LABORATORY
5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610
(813) 621-0784

GROUNDWATER SAMPLE ANALYSES

April 15, 1992



Since 1938

**WADSWORTH/ALERT
LABORATORIES** 5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

ANALYTICAL REPORT

SUBCONTRACT NUMBER: 1-08-134

TASK ORDER NUMBER: 0015, MOD. NO. 0001

NAS/NADEP PENSACOLA

Presented to:

PETER REDFERN

ABB ENVIRONMENTAL SERVICES, INC.

WADSWORTH/ALERT LABORATORIES

5910 BRECKENRIDGE PARKWAY, SUITE H

TAMPA, FL 33610

(813) 621-0784

**Dan Henson
Project Manager**

**Randall C. Grubbs
Laboratory Director - Florida**

May 4, 1992

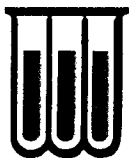


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WADSWORTH/ALERT
LABORATORIES

INVOLVEMENT

This report summarizes the analytical results of the NAS/NADEP Pensacola site submitted by ABB Environmental Services, Inc. to Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Peter Redfern. The samples were accepted into Wadsworth's Florida facility on 16 April 1992, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.



WADSWORTH/ALERT
LABORATORIES

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER	METHOD

ORGANICS	
Volatile Organics	** EPA Method 624
Base Neutral/Acid Extractables	** EPA Method 625
METALS	
Arsenic	** EPA Method 206.2
Cadmium	** EPA Method 200.7
Chromium	** EPA Method 200.7
Lead	** EPA Method 239.2
MISCELLANEOUS	
Tot. Rec. Petroleum Hydrocarbons	** EPA Method 418.1

NOTE: ** Indicates usage of this method to obtain results for this report.

EPA Methods -Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982
Drinking Waters USEPA, 600/4-88/039, December, 1988.

Std. Methods -Standard Methods for the Examination of Water and Wastewater, APHA, 16th edition, 1985.

USEPA Methods -From 40CFR Part 136, published in Federal Register on October 26, 1984.

SW846 Methods -Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

ASTM Methods -American Society for Testing and Materials.

NIOSH Method -NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	84	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	90	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	55	(22-135)	(10-155)
Fluorobiphenyl	65	(34-140)	(12-153)
Terphenyl-d14	39	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

Butyl-cyclobutane

16 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-1
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

CERTIFICATION #: E84059
HRS84297

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS
		WATER SOLID
2-Fluorophenol	51	(17-95) (24-118)
Phenol-d5	58	(11-89) (17-124)
2,4,6-Tribromophenol	50	(10-134) (10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.

DATE RECEIVED: 4/16/92

LAB #: 2D1601-1

MATRIX : WATER

SAMPLE ID : 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059

**METALS ANALYTICAL REPORT
SELECTED LIST**

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	4/28/92	ND	10	ug/L
Cadmium	4/28/92	ND	10	ug/L
Chromium	4/28/92	ND	50	ug/L
Lead	4/28/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-1
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-MW1 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	92	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	93	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

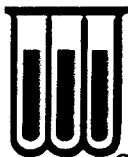
SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	45	(22-135)	(10-155)
Fluorobiphenyl	41	(34-140)	(12-153)
Terphenyl-d14	22	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	30	(17-95)	(24-118)
Phenol-d5	29	(11-89)	(17-124)
2,4,6-Tribromophenol	24	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-2
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/28/92	ND	10 ug/L
Cadmium	4/28/92	ND	10 ug/L
Chromium	4/28/92	ND	50 ug/L
Lead	4/28/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-2
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-MW2 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	8
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	1	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	91	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	95	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	58	(22-135)	(10-155)
Fluorobiphenyl	54	(34-140)	(12-153)
Terphenyl-d14	30	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	47	(17-95)	(24-118)
Phenol-d5	47	(11-89)	(17-124)
2,4,6-Tribromophenol	30	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-3
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	4/28/92	ND	10	ug/L
Cadmium	4/28/92	ND	10	ug/L
Chromium	4/28/92	ND	50	ug/L
Lead	4/28/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-3
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

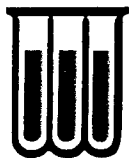
SAMPLE ID: 3221SW-MW3 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	1
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	92	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	91	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	56	(22-135)	(10-155)
Fluorobiphenyl	53	(34-140)	(12-153)
Terphenyl-d14	27	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

Butyl-cyclobutane

11 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

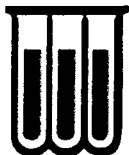
CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	39	(17-95)	(24-118)
Phenol-d5	37	(11-89)	(17-124)
2,4,6-Tribromophenol	29	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-4
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	4/28/92	ND	10	ug/L
Cadmium	4/28/92	ND	10	ug/L
Chromium	4/28/92	ND	50	ug/L
Lead	4/28/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-4
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-MW4 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	13 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	6
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	91	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	109	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,3,5-Trimethyl benzene	150 ug/L
1,2-Diethyl benzene	37 ug/L
1-(4-Methyl phenyl) ethanone	19 ug/L
1,3-Diethyl benzene	21 ug/L
1-Methyl-3-(1-methylethyl) benzene	77 ug/L
4-Ethyl-1,2-dimethyl benzene	57 ug/L
2-Ethyl-1,4-dimethyl benzene	29 ug/L
2,3-Dihydro-1-methyl-1H-indene	25 ug/L
1-Ethyl-2,3-dimethyl benzene	28 ug/L
1,2,3,4-Tetramethyl benzene	35 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND

N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND

Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	50	(22-135)	(10-155)
Fluorobiphenyl	36	(34-140)	(12-153)
Terphenyl-d14	24	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059
HRS84297

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

(1-Methylethyl)-benzene	9 ug/L
1,2-Diethyl-benzene	24 ug/L
1,4-Diethyl-benzene	13 ug/L
1,3-Diethyl benzene	15 ug/L
1-Octanol	15 ug/L
1-Methyl-4-(1-methylethyl)-benzene	66 ug/L
2-Ethyl-1,4-dimethyl-benzene	15 ug/L
1-Ethyl-3,5-dimethyl-benzene	18 ug/L
2,3-Dihydro-4-methyl-1H-indene	13 ug/L
1,2,3,4-Tetrahydro-naphthalene	8 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

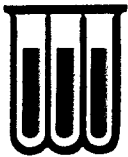
CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	38	(17-95)	(24-118)
Phenol-d5	38	(11-89)	(17-124)
2,4,6-Tribromophenol	31	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-5
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-MW5 NADEP PEN

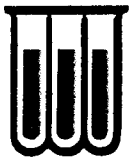
CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/28/92	ND	10 ug/L
Cadmium	4/28/92	ND	10 ug/L
Chromium	4/28/92	ND	50 ug/L
Lead	4/28/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-5
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-MW5 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

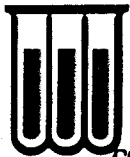
CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	92	(75-123)	(85-126)	(85-138)
Toluene-d8	98	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	92	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	58	(22-135)	(10-155)
Fluorobiphenyl	109	(34-140)	(12-153)
Terphenyl-d14	31	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059
HRS84297

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

Butyl-cyclobutane

19 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	42	(17-95)	(24-118)
Phenol-d5	43	(11-89)	(17-124)
2,4,6-Tribromophenol	38	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-6
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	4/28/92	ND	10	ug/L
Cadmium	4/28/92	ND	10	ug/L
Chromium	4/28/92	ND	50	ug/L
Lead	4/28/92	6	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-6
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-DUPLICATE NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-12
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/18/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	93	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-12
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL -- EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-12
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

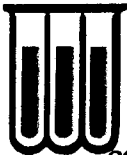
CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS
		WATER SOLID
Nitrobenzene-d5	56	(22-135) (10-155)
Fluorobiphenyl	54	(34-140) (12-153)
Terphenyl-d14	60	(10-132) (13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-12
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	39	(17-95)	(24-118)
Phenol-d5	37	(11-89)	(17-124)
2,4,6-Tribromophenol	35	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-12
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059

**METALS ANALYTICAL REPORT
SELECTED LIST**

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	4/28/92	ND	10	ug/L
Cadmium	4/28/92	ND	10	ug/L
Chromium	4/28/92	ND	50	ug/L
Lead	4/28- 4/29/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-12
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221SW-EQUIP BLANK NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-13
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/18/92

SAMPLE ID: TRIP BLANK NADEP PEN

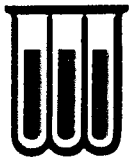
CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	91	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	92	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



WADSWORTH/ALERT
LABORATORIES

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

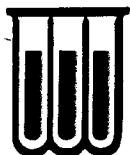
Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



WADSWORTH/ALERT
LABORATORIES

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	QC LIMITS	
					RPD	RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.	accep. method perform range	

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/17/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	81	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	91	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/20/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	1
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND** (None Detected, lower detectable limit = ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

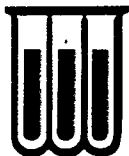
SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	59	(22-135)	(10-155)
Fluorobiphenyl	63	(34-140)	(12-153)
Terphenyl-d14	69	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/16/92
DATE ANALYZED: 4/24/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	47	(17-95)	(24-118)
Phenol-d5	45	(11-89)	(17-124)
2,4,6-Tribromophenol	54	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-BK
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	4/28/92	ND	10 ug/L
Cadmium	4/28/92	ND	10 ug/L
Chromium	4/28/92	ND	50 ug/L
Lead	4/28/92	ND	5 ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories
Division of Ensco Incorporated

5910 Breckenridge Parkway, Suite H
Tampa, FL 33610

813-621-0784
FAX 813-623-6021

ANALYTICAL REPORT

SUBCONTRACT NUMBER: 1-08-134

TASK ORDER NUMBER: 0015

NADEP PENSACOLA

Presented to:

PETER REDFERN

ABB ENVIRONMENTAL SERVICES, INC.

WADSWORTH/ALERT LABORATORIES

5910 BRECKENRIDGE PARKWAY, SUITE H

TAMPA, FL 33610

(813) 621-0784

Dan Henson
Project Manager

Randall C. Grubbs
Laboratory Director - Florida

September 14, 1992



INVOLVEMENT

This report summarizes the analytical results of the NADEP Pensacola site submitted by ABB Environmental Services, Inc. to Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Peter Redfern. The samples were accepted into Wadsworth's Florida facility on 29 August 1992, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.



WADSWORTH/ALERT Laboratories

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER	METHOD

METALS	
Arsenic	** EPA Method 206.2 ** SW846 Method 7060
Cadmium	** EPA Method 200.7 ** SW846 Method 6010
Chromium	** EPA Method 200.7 ** SW846 Method 6010
Lead	** EPA Method 239.2 ** SW846 Method 6010
Digestion	** SW846 Method 3050

NOTE: ** Indicates usage of this method to obtain results for this report.

(D)	Indicates draft version of this method was used
EPA Methods	Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982
Std. Methods	Drinking Waters USEPA, 600/4-88/039, December, 1988.
USEPA Methods	Standard Methods for the Examination of Water and Waste-water, APHA, 16th edition, 1985.
SW846 Methods	From 40CFR Part 136, published in Federal Register on October 26, 1984.
ASTM Methods	Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.
NIOSH Method	American Society for Testing and Materials.
	NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2H2914-1
MATRIX : SOIL

DATE RECEIVED: 8/29/92

SAMPLE ID : SB9 (5')

PROJ #3221 SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 95

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 8- 9/ 9/92	ND	0.5	mg/kg
Cadmium	9/ 8/92	ND	0.5	mg/kg
Chromium	9/ 8/92	ND	2.5	mg/kg
Lead	9/ 8/92	ND	2.5	mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2H2914-2
MATRIX : SOIL

DATE RECEIVED: 8/29/92

SAMPLE ID : SB10 (5')

PROJ #3221 SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 94

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	9/ 8- 9/ 9/92	ND	0.5 mg/kg
Cadmium	9/ 8/92	ND	0.5 mg/kg
Chromium	9/ 8/92	ND	2.5 mg/kg
Lead	9/ 8/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2H2914-3
MATRIX : SOIL

DATE RECEIVED: 8/29/92

SAMPLE ID : SB11 (5')

PROJ #3221 SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	9/ 8- 9/ 9/92	ND	0.5 mg/kg
Cadmium	9/ 8/92	ND	0.5 mg/kg
Chromium	9/ 8/92	ND	2.5 mg/kg
Lead	9/ 8/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2H2914-4
MATRIX : SOIL

DATE RECEIVED: 8/29/92

SAMPLE ID : SB12 (5')

PROJ #3221 SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 95

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	9/ 8- 9/ 9/92	ND	0.5 mg/kg
Cadmium	9/ 8/92	ND	0.5 mg/kg
Chromium	9/ 8/92	ND	2.5 mg/kg
Lead	9/ 8/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2H2914-5
MATRIX : SOIL

DATE RECEIVED: 8/29/92

SAMPLE ID : SB13 (5')

PROJ #3221 SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 94

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	9/ 8- 9/ 9/92	ND	0.5 mg/kg
Cadmium	9/ 8/92	ND	0.5 mg/kg
Chromium	9/ 8/92	ND	2.5 mg/kg
Lead	9/ 8/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2H2914-6
MATRIX : WATER

DATE RECEIVED: 8/29/92

SAMPLE ID : EQUIP BLANK PROJ #3221 SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 4- 9/ 8/92	ND	10	ug/L
Cadmium	9/ 4/92	ND	10	ug/L
Chromium	9/ 4/92	ND	50	ug/L
Lead	9/ 4/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



WADSWORTH/ALERT Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

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NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



WADSWORTH/ALERT Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150

(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.	accep. method perform range
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Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2H2914-BK
MATRIX : WATER

DATE RECEIVED: 8/29/92

SAMPLE ID : LABORATORY BLANK PROJ #3221 SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 4- 9/ 8/92	ND	10	ug/L
Cadmium	9/ 4/92	ND	10	ug/L
Chromium	9/ 4/92	ND	50	ug/L
Lead	9/ 4/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2H2914-BK
MATRIX : SOIL

DATE RECEIVED: 8/29/92

SAMPLE ID : LABORATORY BLANK PROJ #3221 SW

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	9/ 8- 9/ 9/92	ND	0.01	mg/L
Cadmium	9/ 8/92	ND	0.01	mg/L
Chromium	9/ 8/92	ND	0.05	mg/L
Lead	9/ 8/92	ND	0.05	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT Laboratories

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
Arsenic (furnace)	09/04/92	09/08/92	86	38 53-131	LCS
Cadmium	09/04/92	09/04/92	93	18 77-113	
Chromium	09/04/92	09/04/92	97	21 79-121	
Lead (furnace)	09/04/92	09/04/92	90	33 64-132	



WADSWORTH/ALERT Laboratories

LAB ID : LCS

MATRIX : SOIL

LABORATORY CONTROL SAMPLE RESULTS
METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
Arsenic furnace	09/08/92	09/09/92	81	36 51-125	LCS
Cadmium	09/08/92	09/08/92	90	22 67-113	
Chromium	09/08/92	09/08/92	89	22 73-118	
Lead	09/08/92	09/08/92	84	35 58-130	



WADSWORTH/ALERT Laboratories

LAB ID : 2H2914-1
MATRIX : SOIL

DATE RECEIVED : 08/29/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - METALS

ELEMENT	DATE PREPARED	DATE ANALYZED	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC	LAB ID
Arsenic furnace	09/08/92	09/09/92	116	120	3	15 77-107	2H2914-1
Cadmium	09/08/92	09/08/92	82	83	1	17 73-107	
Chromium	09/08/92	09/08/92	86	87	1	14 80-108	
Lead	09/08/92	09/08/92	92	95	3	34 65-135	

* = Diluted out

**WADSWORTH/ALERT LABORATORIES
SAMPLE SHIPPER EVALUATION AND RECEIPT FORM**

Client: ABB Project Name/Number: 3221 SW
 Samples Received By: Zachary Butler Date Received: 8/29/92
 (Signature)
 Sample Evaluation Form By: Zachary Butler LAB No: 5183/2H2914-1H
 (Signature)
 Type of shipping container samples received in? WAL Cooler ✓
 Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

	YES	NO
1. Were custody seals on shipping container(s) intact?	<u>✓</u>	<u> </u>
2. Were custody papers properly included with samples?	<u>✓</u>	<u> </u>
3. Were custody papers properly filled out (ink, signed, match labels)?	<u>✓</u>	<u> </u>
4. Did all bottles arrive in good condition (unbroken)?	<u>✓</u>	<u> </u>
5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	<u>✓</u>	<u> </u>
6. Were correct bottles used for the tests indicated?	<u>✓</u>	<u> </u>
7. Were proper sample preservation techniques indicated?	<u>✓</u>	<u> </u>
8. Were samples received within adequate holding time?	<u>✓</u>	<u> </u>
9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	<u>✓</u>	<u> </u>
10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	<u>✓</u>	<u> </u>
11. Were samples accepted into the laboratory? (If no see comments)	<u>✓</u>	<u> </u>

Cooler # 174 Temp 8 °C Cooler # Temp °C
 Cooler # Temp °C Cooler # Temp °C

Comments: No Parameter list for Metal on COC. bottles
Parameter indicate As, Cd, Cr, Pb,